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WORLD DATA CENTER A

Oceanography



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CATALOGUE OF DATA

CHANGE NOTICE NOS. 44 and 45

WDCA-OC-90-2



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WORLD DATA CENTER A
Oceanography



CATALOGUE OF DATA

CHANGE NOTICE NOS. 44 AND 45
(1 JANUARY- 31 DECEMBER 1989)

WORLD DATA CENTER A
Oceanography
Washington, D.C.

November 1990

ABSTRACT

This change notice lists and describes all data received by WDC-A, Oceanography during the period 1 January - 31 December 1989. It supplements the original six-volume Catalogue of Data, which includes Change Notice Nos. 1-16. The types of data catalogued include oceanographic station data, bathythermograph data, current measurements, biological observations, meteorological observations, and sea surface measurements. An Alphabetical Index of ship names and a Geographical Index of ocean areas assist the user in selecting the required data. Publications are cross referenced by accession number with the WDC-A Catalogue of Accessioned Publications.

CONTENTS

	Page
ABSTRACT	ii
WORLD DATA CENTER A	iv
PREFACE	vi
INTRODUCTION	1
HOW TO USE THE CHANGE NOTICE TO THE CATALOGUE OF DATA . . .	2
How to Use the Alphabetical Index	3
How to Use the Geographical Index	3
How to Obtain Data from WDC-A, Oceanography	4
Data Exchange Policy of WDC-A, Oceanography	4
Acknowledgement of Data Sources	6
EXPLANATION OF THE ALPHABETICAL INDEX OF SHIPS AND FIXED STATIONS	7
EXPLANATION OF THE GEOGRAPHICAL INDEX	7
ALPHABETICAL INDEX	8
GEOGRAPHICAL INDEX	14
NUMERICAL LIST OF COUNTRIES	19
LIST OF INITIALS OF DATA CENTERS	20
INDEX OF COUNTRIES AND INSTITUTIONS CONTRIBUTING DATA TO WDC-A, OCEANOGRAPHY DURING THE PERIOD 1 JANUARY - 31 DECEMBER 1989	21
EXPLANATION OF WDC-A, OCEANOGRAPHY DATA INFORMATION SHEET	25
REMARKS	53
TRACK CHARTS	55
DATA HOLDINGS OF RNODC's AND SPECIALIZED DATA CENTERS . . .	57

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Cooperative Institute for Research
in Environmental Sciences
University of Colorado
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Telephone: (303) 492-5171
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ROCKETS AND SATELLITES:

World Data Center A,
Rockets and Satellites
Goddard Space Flight Center
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METEOROLOGY (AND NUCLEAR RADIATION):

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ROTATION OF THE EARTH

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World Data Center A,
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PREFACE

The six-volume Catalogue of Data and the loose-leaf Change Notice Nos. 1-16, which have been integrated into the Catalogue, now list all oceanographic data received by World Data Center A, Oceanography, from July 1957 through June 1975. The Catalogue has a loose-leaf arrangement of sheets, which have been punched for standard three-ring binders. It includes station location charts for many cruises.

Beginning with Change Notice No. 17, each Change Notice is printed in a modified format as a separate, bound publication describing all data received during a particular six-month or one-year period. The six-volume Catalogue of Data, including Change Notice Nos. 1-16, continues to serve as a reference volume for data received from July 1957 through June 1975. Provision has been made in the modified format for correlating newly received data for a particular cruise with data previously received for that same cruise and already described in a prior Change Notice.

The capability for identifying those data, which have been machine-processed by a national, regional, or responsible national oceanographic data center, has been retained in the modified catalogue format. In addition, this format provides a column for listing the catalogue number from the WDC-A, Oceanography, Catalogue of Accessioned Publications, thus identifying the published report in which the referenced data appear.

Data gathered before the beginning of the IGY in 1957 are not usually catalogued by the World Data Centers. However, extensive collections of pre-IGY oceanographic data gathered by various countries are available through the facilities of this Center. These data for the most part are oceanographic serial station data, surface and related data available in automated form. Machine listings and magnetic tapes containing these data can be prepared upon request.

WDC-A, Oceanography, welcomes suggestions for improved ways to present information in the Change Notices to the Catalogue of Data. It will make every effort to promptly correct any cataloguing error or omission brought to its attention.

INTRODUCTION

The World Data Center system was established in 1957 to collect data from the numerous and widespread observational programs of the International Geophysical Year (IGY) under the principles set forth by the International Council of Scientific Unions (ICSU) and to make such data readily accessible for an indefinite period of time to interested scientists and scholars. The system consists of World Data Center A (WDC-A) located in the U.S.A.; WDC-B located in the U.S.S.R.; WDC-C located in Western Europe and Japan; and WDC-D located in the People's Republic of China. WDC-A is established under the auspices of the U.S. National Academy of Sciences, where the Coordination Office is located. WDC-A is divided into nine discipline subcenters whose addresses are given on pages iv and v. These centers are located in institutions which, in the opinion of the Academy, can best serve the interests of science because of their data-handling capabilities for the appropriate scientific disciplines. WDC-A, Oceanography, is collocated with the National Oceanographic Data Center (NODC) in Washington, D.C.

After completion of the IGY program, ICSU delegated the responsibility for the operation of the World Data Centers to its Comité International de Géophysique (CIG) and subsequently to the ICSU Panel on World Data Centres. The framework for continued international exchange of oceanographic data is set forth in ICSU's Guide to International Data Exchange through the World Data Centres and the Intergovernmental Oceanographic Commission's (IOC's) Manual on International Oceanographic Data Exchange.

The types of oceanographic data desired for inclusion in the World Data Center system are those from Declared National Programs (DNP's) and international cooperative expeditions. DNP's are those for which a nation intends to exchange the resulting data internationally. Data are to be exchanged internationally in accordance with provisions of the IOC's Manual and the ICSU Guide. Lists of National Oceanographic Programs (NOP's) are compiled by the various national committees on oceanography and submitted to the Intergovernmental Oceanographic Commission for dissemination.

Contributors of oceanographic data to the World Data Center system and national committees on oceanography are urged to compare the Catalogue of Data with their Declared National Programs published in IOC information documents to determine whether the cruises actually completed agree with those listed and to ensure that the data resulting from them are transmitted to the World Data Centers in the manner prescribed by the IOC Manual and the ICSU Guide. Data need not be limited to those represented by DNP's or NOP's; WDC-A, Oceanography, welcomes additional data that fall within the framework of the ICSU Guide and the IOC Manual and that contributors may wish to include in the World Data Center system.

HOW TO USE THE CHANGE NOTICE TO THE CATALOGUE OF DATA

Catalogue Numbering System

The catalogue numbering system uses groups of numbers and letters to designate identifying references for purposes of data archiving and retrieval. A catalogue number consists of numerals for the assigned: series, country, institution, ship and cruise.

Series -- The catalogue numbering system is divided into basic groups called series. At present, these consist of the 100 series for data from ships and other mobile platforms and the 200 series for data from shore and fixed stations in the following categories:

- a. Coastal and island stations.
- b. Near shore manned stations; i.e., lightvessels and platforms.
- c. Offshore manned stations; i.e., ocean weather ships.
- d. Unmanned stations; i.e., automatic buoys.
- e. Stations on shipping routes.
- f. Offshore reference stations visited regularly.
- g. Cables in use for oceanographic observations.
- h. Repetitive drifting observations; i.e., ice islands, drifting buoys.

Country -- A list in the Indexes section includes all countries and institutions from which this Center has received data during this period together with their discrete identifying numbers. The series and two-digit country number comprise the first three digits of the catalogue number.

Example: For country number 1, Argentina, data from ships and mobile platforms are catalogued as 101, and data from shore and fixed stations as 201.

NOTE: The designations of countries used in this catalogue do not imply the expression of any opinion whatsoever on the part of this Center concerning the legal status of any country or territory, or of its authorities, or concerning the delineation of the frontiers of any country or territory.

Institution -- An institution which contributed data, either directly or through its designated national agency or national, regional or specialized oceanographic data center, is assigned a decimal number following the series/country number.

Example: The number 101.01 is assigned to data taken by ships and mobile platforms and received from the Argentine Servicio de Hidrografia Naval, and the number 201.01 is assigned to data taken at shore and fixed stations and received from the same institution.

Ship -- Each ship, or in some instances a group of ships operating together, is assigned a letter following the series/country/institution number. The letter is followed by a number assigned to the particular cruise as the data are received.

NOTE: The term "cruise" is used in this catalogue to define, whenever possible, the beginning and ending dates of a series of data collected by a ship, usually identified by the contributing institution with a cruise name and/or number. Sometimes it is necessary to group together several series of data from one or more ships under one catalogue number.

Example: The first cruise data received from the Argentine Servicio de Hidrografia Naval are from the ship CAPITAN CANEPA, which is assigned the letter A, followed by the number 01, thus A-01; the second cruise is A-02, the third A-03, etc. Thus, the catalogue numbers 101.01 A-01, A-02, A-03, etc.

A similar system is used in the 200-series for ships but is not applied to lightvessels and fixed shore stations; for the latter the ship/cruise identifier is omitted. For these categories, the series/country/institution numbers are given, but the lightvessel's or station's name must be added instead of the ship/cruise number to complete the catalogue identification.

Example: The Canadian station at Triple Island is identified as: 206.03 Triple Island.

A shore station is listed under the country in or near whose territory it is located. If observations are carried out and the data contributed by an institution of another country, the observing country's name and institution are listed after the name of the country of location.

How to Use the Alphabetical Index

1. Look up the name of the ship or fixed station in the Alphabetical Index where the related country/institution/ship catalogue numbers are listed.

2. Look up, under the respective countries, the indicated Catalogue Numbers.

How to Use the Geographical Index

1. Obtain the geographic area number and name from the Geographical Index Charts.

2. Look up the list of catalogue numbers of available data for the area in the Geographical Index.

3. Use these catalogue numbers to locate information about the types and amount of data available.

How to Obtain Data from WDC-A, Oceanography

When communicating with the Center for additional information concerning data, always refer to the specific catalogue numbers for data of interest to you. The catalogue numbers are designed to speed the identification and retrieval of the information or data you need.

Address all correspondence to:

Director
World Data Center A, Oceanography
National Oceanic and Atmospheric Administration
Washington, D.C. 20235, U.S.A.

If you telephone, the area code is 202.

The Director's number is 606-4546.
The Associate Director's number is 606-4571.
The Data Archives number is 606-4571.

If you wish to visit the Center, its office hours are from 6:30 a.m. to 4:00 p.m., Monday through Friday. The Center is not open on Saturdays, Sundays, and U.S. national holidays. If you wish the use of study space, you should, if possible, give the Center a day or two advance notice so that necessary arrangements can be made. There is no charge for the use of study space.

Data Exchange Policy of World Data Center A, Oceanography

World Data Centers are held responsible for the provision of data and information to qualified requesters in the scientific community either in exchange or at a cost not to exceed that of processing and shipping. Unless a requester specifies otherwise, the Center is responsible for using the method which most satisfactorily reproduces the data or information item at the least cost. For certain types of requests, limitations in funding, personnel, or facilities may preclude direct or free provision of data or information by the World Data Center.

Data exchanges between WDC-A, Oceanography and WDC's in the same discipline usually take place without charge for routine exchanges of mutually agreed-upon types of data received by WDC-A in internationally-approved data exchange formats and in readily reproducible media forms. Non-standard data types are not normally exchanged. The ICSU Panel has now recognized that it is not always economically feasible to copy large data sets from one WDC to another. For certain types of data, the exchange of inventories of available data in a WDC subcenter may be considered acceptable in lieu of the transfer of the actual data sets.

In general, reasonably-sized requests from national or regional contributors to WDC-A, Oceanography may be considered as exchange, and equivalent data thus provided to the requester without charge. For requests for unusually large amounts of data, for specially formatted data, for derived data products, or for data to be obtained from outside the WDC system, WDC-A will normally be required to recover the costs of processing and shipping, or, at its discretion, may arrange for the request to be serviced by an RNO DC or a regional, national, or disciplinary center. WDC-A may serve as an intermediary or coordinator for requests for unique types of data or data in other disciplines by placing the originator of the request in contact with the appropriate institution or disciplinary center.

Normally, WDC-A, Oceanography considers its data exchange commitment with a cooperating Data Center to be limited to the servicing of those requests or routine updating requirements intended to build or enhance standard data bases operated by that Center for specific, mutually agreed-upon data types and geographical areas of national or scientific interest. If the availability of funding and resources permit, WDC-A also attempts to assist such cooperating Data Centers when they require special data sets for institutions that are performing project-related research for international climate and global change programs and/or that have historically contributed data to WDC-A, Oceanography through that Data Center. WDC-A, Oceanography is obliged, in any case, to follow the exchange and cost recovery policies of its sponsoring (funding) government agency, while attempting to maintain consistency with data exchange guidelines of the ICSU Panel on WDC's as published in the ICSU Guide.

Data and information may be requested from WDC-A, Oceanography through NODCs, Designated National Agencies, or any other organization identified by national or international initiatives as responsible for communication with the World Data Centers. These materials may also be requested directly from WDC-A, Oceanography. Organizations, institutions, or individuals from Member States of the IOC may apply to the IOC Secretariat or UNESCO for possible assistance in funding their projects.

Data Centers or institutions in the international community that have acquired an automated data set or specialized data product from WDC-A must be aware that the original data set may be updated from time to time, errors corrected, or spurious data deleted by the originating data center. Where duplicate data sets are deliberately held in this way, the holder is responsible for making regular contact, as required, with the originating center to check whether the old data set is still valid, whether it should be deleted, or whether new data are available. WDC-A bears no responsibility in the conduct of these arrangements, except as regards the provision of information in its role as a coordination and referral center.

Acknowledgment of Data Sources

In many instances, data contributed to the Center are unpublished at the time of receipt. Unpublished data can be identified in the Change Notice by the absence of a publication number in the column entitled Data Center Reference Number. Accordingly, as stipulated by the Guide, recipients of copies of such data from the Center are reminded that the rights of the original investigators must always be respected. Thus, it is requested that if any data supplied by Center are published, due acknowledgment be made of the institution which undertook the original observations. To facilitate proper acknowledgment, the Change Notice indicates the originating institution.

PART I
CATALOGUE INDEXES

EXPLANATION OF THE ALPHABETICAL INDEX OF SHIPS AND FIXED STATIONS

This index presents in alphabetical order the names of the ships, lightvessels, platforms, and shore stations that are listed on the Data Information sheets.

Ship or Fixed Station -- The name of the ship, lightvessel, platform, lighthouse, shore station, etc. Names of ships and lightvessels are given in capital letters, with lightvessels identified by (LV) after their name. All others not so identified are shore or other types of fixed stations.

Country -- The name of the country that used the ship to collect data, or the name of the country in or near whose territory fixed oceanographic stations observations were made. If the data were collected by an institution of another country, the contributing country is listed after the one where the observations were taken.

Catalogue Number -- The country and institution numbers and ship letter assigned to each ship are given in this column to facilitate locating data information in the catalogue.

EXPLANATION OF THE GEOGRAPHICAL INDEX

The Geographical Index is based on the divisions of areas shown on the three charts immediately preceding the Index. These divisions are defined in "Limits of Oceans and Seas," Special Publication No. 23 of the International Hydrographic Bureau, third edition, Monaco, 1953. To define the extensive areas of the Atlantic, Indian, and Pacific Oceans more specifically, the following subdivisions have been added:

23 - <u>North Atlantic Ocean</u>	57 - <u>North Pacific Ocean</u>
23a - Northeast Atlantic	57a - Northwest Pacific
23b - Northwest Atlantic	57b - Northeast Pacific
32 - <u>South Atlantic Ocean</u>	61 - <u>South Pacific Ocean</u>
32a - Southeast Atlantic	61a - Southwest Pacific
32b - Southwest Atlantic	61b - Southeast Pacific
45 - <u>Indian Ocean</u>	SO - <u>Southern Oceans</u>
45a - Northwest Indian	South of latitude
45b - Northeast Indian	50° South
45c - Southwest Indian	
45d - Southeast Indian	

The catalogue numbers of ship cruises extending into any of the areas, or shore or fixed stations located in the areas, are listed under the area's number and name.

ALPHABETICAL INDEX

SHIP OR FIXED STATION	COUNTRY	CATALOGUE NUMBER	
- A -			
ADZHARIA	U.S.S.R.	137.15	K
AKADEMIK KNIPOVICH	U.S.S.R.	137.11	A
AKI	JAPAN	124.23	A
ALBATROSS IV	U.S.A.	139.23	D
ALFRED NEEDLER	CANADA	106.11	V
ALMIRANTE SALDANHA	BRAZIL	104.01	A
AMAGI MARU	JAPAN	124.05	B
ANTON DOHRN	GERMANY (Federal Republic)	114.02	C
		114.05	C
		114.07	A
		114.11	A
ASAMA MARU	JAPAN	124.05	B
ASHU MARU NO. 2	JAPAN	124.27	A
A. T. CAMERON	CANADA	106.11	C
ATKA	U.S.A.	139.03	A
ATLANTIS	U.S.A.	139.01	A
ATLANTIS II	U.S.A.	139.01	C
AZUMA	JAPAN	124.21	A
- B -			
BIOMAR I	VENEZUELA	153.03	A
BOGUSLAV	U.S.S.R.	137.06	Y
BORKUMRIFF (LV)	GERMANY (Federal Republic)	214.01	
BUSAN 852	KOREA	143.02	T
		243.01	C
BUZEN	JAPAN	124.23	A
- C -			
CAPE FREELS	CANADA	106.10	B
CHAIN	U.S.A.	139.01	D
CHARLES DARWIN	UNITED KINGDOM	138.10	B
CHIBA MARU NO. 2	JAPAN	124.05	B
CHISHIO MARU	JAPAN	124.27	A
CHOFU MARU	JAPAN	124.10	D
CHOKAI MARU	JAPAN	124.27	A
CHOSUI MARU	JAPAN	124.27	A
CIROLANA	UNITED KINGDOM	138.01	R
CREST	U.S.A.	139.31	C
- D -			
DAVID STARR JORDAN	U.S.A.	139.23	Y
DAWSON	CANADA	106.09	I
DELAWARE II	U.S.A.	139.23	P
DISCOVERER	U.S.A.	139.23	K
DISCOVERY	UNITED KINGDOM	138.05	B
DOLPHIN	U.S.A.	139.23	G

ALPHABETICAL INDEX

SHIP OR FIXED STATION	COUNTRY	CATALOGUE NUMBER	
- E -			
EDISTO	U.S.A.	139.03	B
E. E. PRINCE	CANADA	106.11	J
EHIME MARU	JAPAN	124.27	A
EL AUSTRAL	ARGENTINA	101.04	A
ELBE 1 (LV)	GERMANY (Federal Republic)	214.01	
ENDEAVOR	U.S.A.	139.05	C
ENDEAVOUR	CANADA	106.19	F
		106.22	A
		106.22	N
		206.08	E
ERIKA-DAN	DENMARK	109.02	J
ESCANABA	U.S.A.	239.07	K
EXPLORER	U.S.A.	139.12	C
- F -			
FEHMARNBELT (LV)	GERMANY (Federal Republic)	214.01	
FRIDTJOF NANSEN	U.S.S.R.	137.11	F
FRITHJOF	GERMANY (Federal Republic)	114.01	S
FUKUI MARU	JAPAN	124.22	A
FUKUSHIMA MARU	JAPAN	124.27	A
FUNAKAWA MARU	JAPAN	124.27	A
FUSAMI MARU	JAPAN	124.05	B
FUSAMI MARU NO. 2	JAPAN	124.05	B
- G -			
GADUS ATLANTICA	CANADA	106.09	AA
GANGWON 867	KOREA	143.02	X
GENICHESK	U.S.S.R.	137.21	L
GENKAI MARU	JAPAN	124.19	B
GENYO MARU	JAPAN	124.27	A
GILLISS	U.S.A.	139.03	H
GOLFO DE CARIACO	VENEZUELA	153.04	A
GUAIQUERI	VENEZUELA	153.01	A
GYUNGBUK 853	KOREA	143.02	U
- H -			
HAKUHO MARU	JAPAN	124.24	B
HAKUSAN MARU	JAPAN	124.22	A
HAYASUI MARU	JAPAN	124.23	A
HAYATE	JAPAN	124.23	A
HEIAN MARU	JAPAN	124.22	A
HIDALGO	U.S.A.	139.07	A
HINOKUNI MARU	JAPAN	124.19	B
HIYAGI MARU	JAPAN	124.27	A
HOKKO MARU	JAPAN	124.20	A
		124.21	A

ALPHABETICAL INDEX

SHIP OR FIXED STATION	COUNTRY	CATALOGUE NUMBER	
HOKUHO MARU	JAPAN	124.27	A
HOKUO MARU	JAPAN	124.21	A
HOKUSEI MARU	JAPAN	124.02	C
HOKUSHIN MARU	JAPAN	124.20	A
HOKUYO MARU	JAPAN	124.20	A
HOYO MARU NO. 12	JAPAN	124.21	A
HUDSON	CANADA	106.09	F
HYDROGRAPHER	U.S.A.	139.12	A
HYOGO MARU	JAPAN	124.23	A
- I -			
Ice Based Party	CANADA	206.08	I
INCHEON 866	KOREA	143.02	Y
INVESTIGATOR II	CANADA	106.10	A
ISOKAZE	JAPAN	124.23	A
IWAKI MARU	JAPAN	124.21	A
IWATE MARU	JAPAN	124.21	A
- J -			
JEONBUK 868	KOREA	143.02	V
JOHN P. TULLY	CANADA	106.22	U
- K -			
KAGAMI	JAPAN	124.19	B
KAIKO MARU	JAPAN	124.05	B
KAIUN MARU	JAPAN	124.21	A
KAIYO MARU	JAPAN	124.22	A
		124.23	A
KAKADIAMAA	GHANA	116.01	E
KANO MARU	JAPAN	124.27	A
KAPITAN SHAYTANOV	U.S.S.R.	137.21	H
KEIFU MARU	JAPAN	124.01	F
Kiel (LH)	GERMANY (Federal Republic)	214.01	
KINSEI MARU	JAPAN	124.20	A
KLIMTSY	U.S.S.R.	137.21	I
KNORR	U.S.A.	139.01	I
KOCHI	JAPAN	124.27	A
KOFU MARU	JAPAN	124.08	D
KOSHIJI MARU	JAPAN	124.22	A
KOYO MARU	JAPAN	124.16	A
KUROSHIO	JAPAN	124.23	A
KUROSHIO MARU	JAPAN	124.19	B
- L -			
LA SALLE	VENEZUELA	153.01	B
LABRADOR	CANADA	106.05	D

ALPHABETICAL INDEX

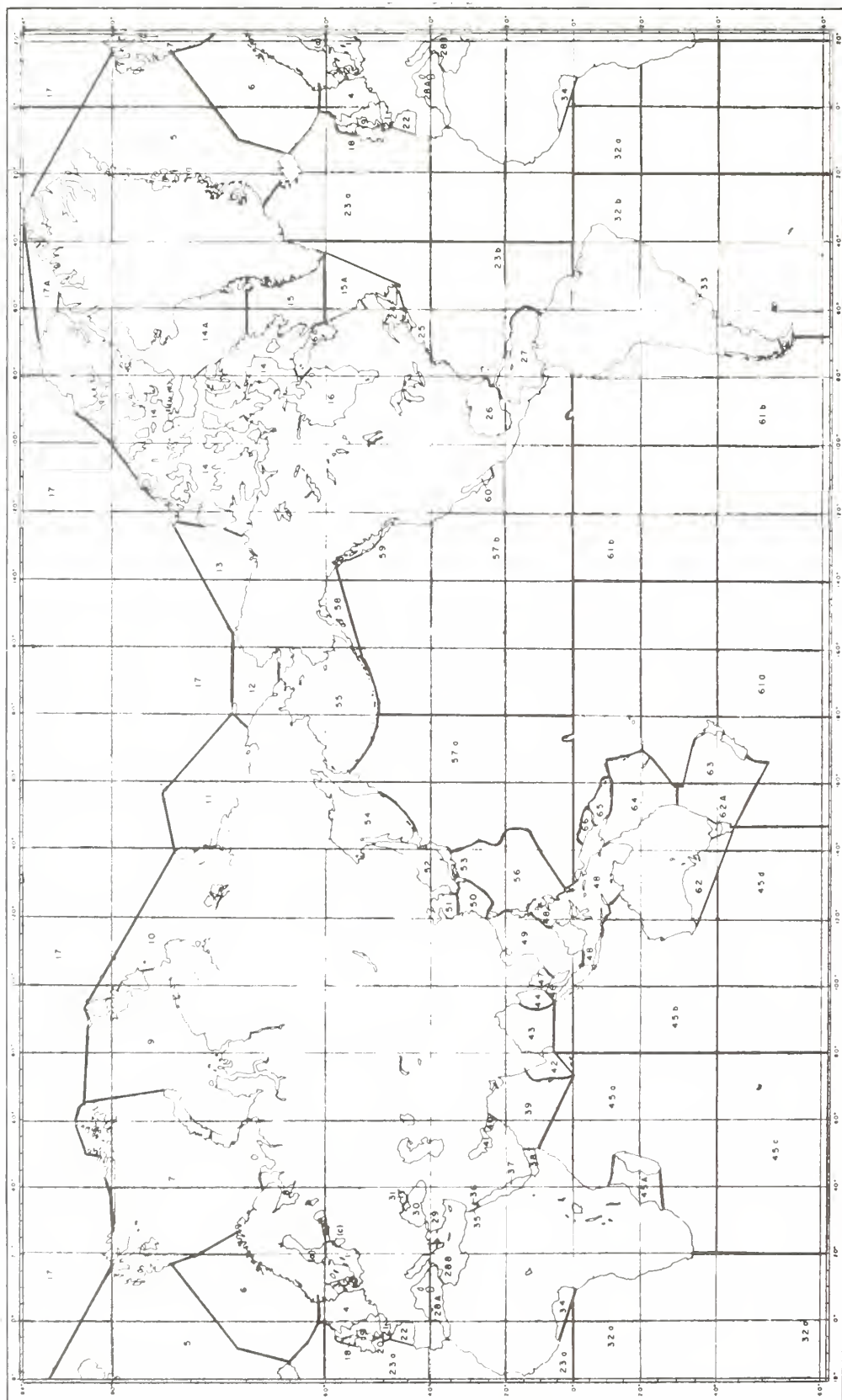
SHIP OR FIXED STATION	COUNTRY	CATALOGUE NUMBER	
LAWRENCE	CANADA	106.05	G
LIPAN	U.S.A.	139.03	HH
- M -			
MATSUDA MARU NO. 2	JAPAN	124.20	A
METEOR	GERMANY (Federal Republic)	114.01	J
MIDORI	JAPAN	124.23	A
MIKHAIL LOMONOSOV	U.S.S.R.	137.04	A
MIYAGI MARU	JAPAN	124.27	A
MIYAKO	JAPAN	124.05	B
MIZUHO MARU	JAPAN	124.22	A
MIZUNAGI	JAPAN	124.22	A
MOGAMI MARU	JAPAN	124.22	A
Mt. Desert Rock (LH)	U.S.A.	239.07	
- N -			
NATSUDO MARU	JAPAN	124.21	A
NAVICULA	CANADA	106.09	P
Neah Bay	U.S.A.	239.02	
NEW HORIZON	U.S.A.	139.08	V
NIKOLAI KONONOV	U.S.S.R.	137.21	B
Nordsee (Platform)	GERMANY (Federal Republic)	214.01	
- O -			
OCA BALDA	ARGENTINA	101.03	A
OCEAN KING	CANADA	206.08	E
OCEANOGRAPHER	U.S.A.	139.23	L
OITA MARU	JAPAN	124.27	A
OSHO RO MARU	JAPAN	124.02	B
OTORI MARU	JAPAN	124.22	A
OYAMA MARU	JAPAN	124.27	A
OYASHIO MARU	JAPAN	124.20	A
- P -			
PANULIRUS	UNITED KINGDOM	238.08	A
PANULIRUS	U.S.A.	239.13	A
PANULIRUS II	U.S.A.	139.01	J
		239.13	C
PARIZEAU	CANADA	106.22	A
		206.08	E
PASSAT	U.S.S.R.	137.06	L
PERSEI III	U.S.S.R.	137.11	L
POISK	U.S.S.R.	137.11	N
PROFESSOR W. BESNARD	BRAZIL	104.02	B
PROTSION	U.S.S.R.	137.11	M
PUERTO DESEADO	ARGENTINA	101.01	K
PUSAN 852	KOREA	143.02	R

ALPHABETICAL INDEX

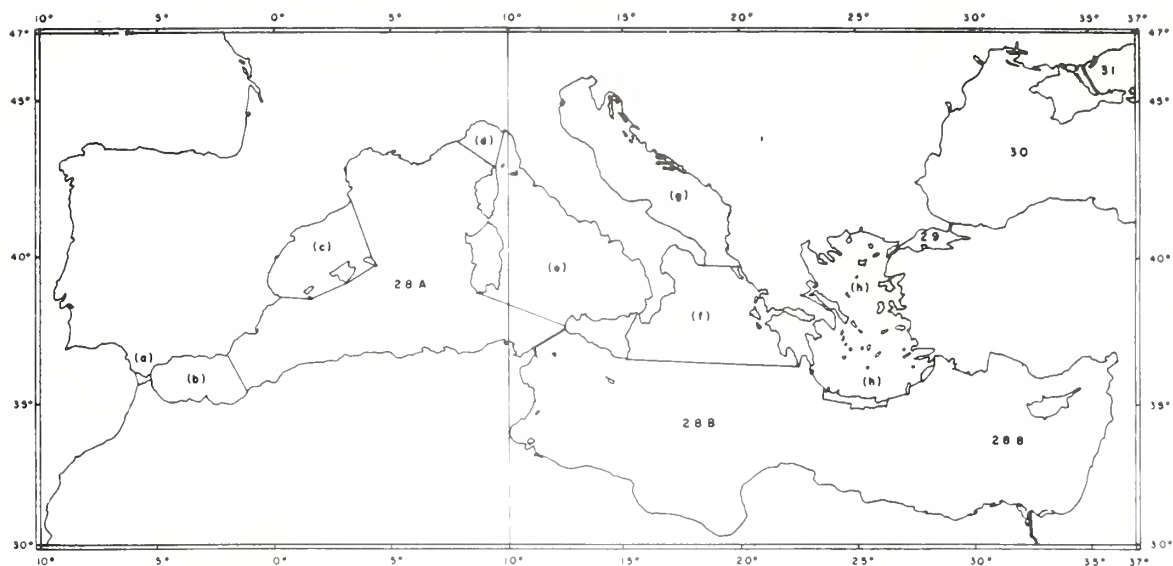
SHIP OR FIXED STATION	COUNTRY	CATALOGUE NUMBER	
- Q -			
QUADRA	CANADA	206.08	A
- R -			
RESEARCHER	U.S.A.	139.23	A
RIASU MARU NO. 1	JAPAN	124.27	A
RIASU MARU NO. 2	JAPAN	124.27	A
RYOFU MARU	JAPAN	124.01	B
- S -			
SACKVILLE	CANADA	106.05	F
SAN PABLO	U.S.A.	139.03	G
SATSUMASEIUN MARU NO. 2	JAPAN	124.27	A
SATSUNAN	JAPAN	124.19	B
SEIFU MARU	JAPAN	124.11	D
SEIHO MARU	JAPAN	124.22	A
SENSHU MARU	JAPAN	124.22	A
SHIMANE MARU	JAPAN	124.22	A
SHIN DAITO MARU	JAPAN	124.21	A
SHINKAI MARU	JAPAN	124.27	A
SHINTAJIMA MARU	JAPAN	124.22	A
SHINYO MARU	JAPAN	124.27	A
SHIOKAZE	JAPAN	124.05	B
SHIRAFUJI MARU	JAPAN	124.23	A
SHIRASE	JAPAN	124.31	B
SHONAN MARU	JAPAN	124.27	A
SHOYO MARU	JAPAN	124.21	A
SHUMPU MARU	JAPAN	124.09	A
SHUNYO MARU	JAPAN	124.21	A
SOLEA	GERMANY (Federal Republic)	114.11	B
SOYO MARU	JAPAN	124.05	B
ST. CATHARINES	CANADA	206.04	A
STONETOWN	CANADA	206.04	A
SULOY	U.S.S.R.	137.11	R
SURUGA MARU	JAPAN	124.05	B
- T -			
TACHIBANA MARU	JAPAN	124.23	A
TAKUYO	JAPAN	124.23	A
TANKAI MARU	JAPAN	124.20	A
TANSHU MARU	JAPAN	124.20	A
		124.27	A
TATEYAMA MARU	JAPAN	124.22	A
TOKIWA	JAPAN	124.21	A
TOKUSHIMA MARU	JAPAN	124.23	A
TONAN MARU	JAPAN	124.23	A
TOO MARU	JAPAN	124.21	A
		124.22	A

ALPHABETICAL INDEX

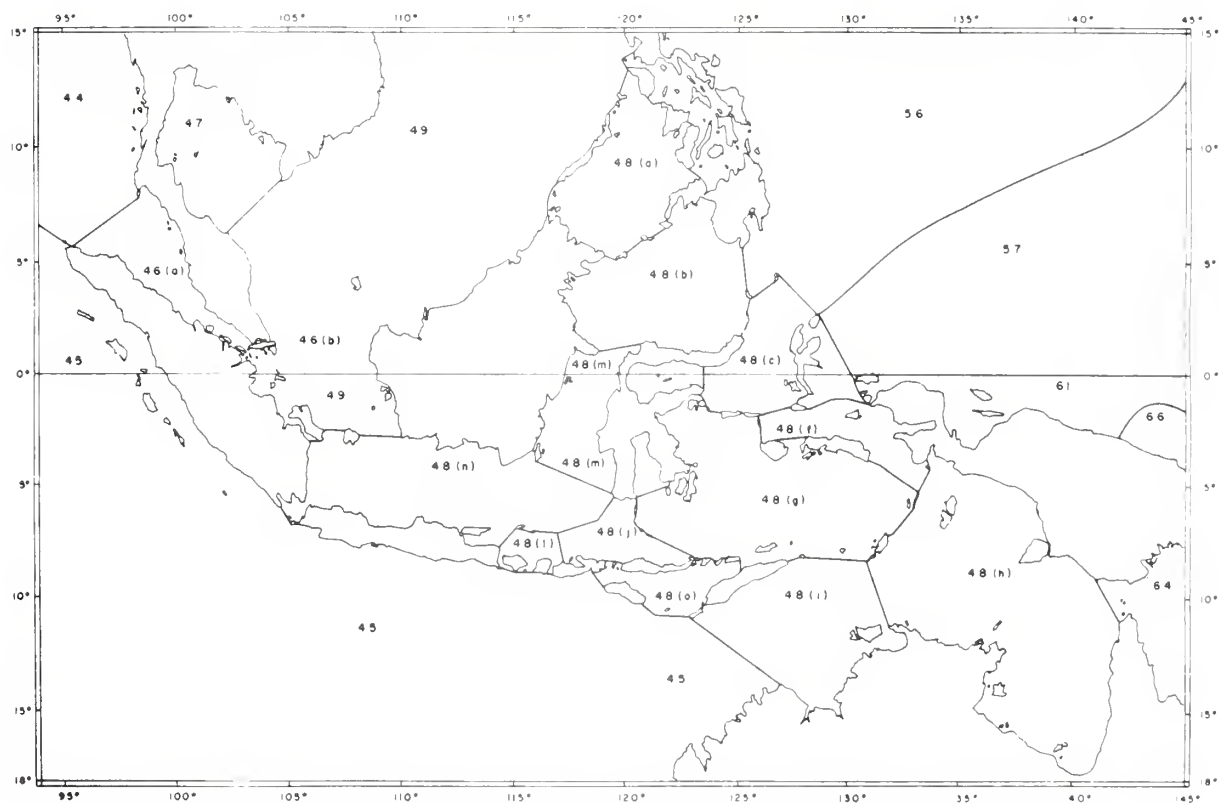
SHIP OR FIXED STATION	COUNTRY	CATALOGUE NUMBER
TOSA	JAPAN	124.23 A
TOSAKAIEN MARU	JAPAN	124.27 A
TOTTORI MARU NO. 1	JAPAN	124.22 A
TRIDENT	U.S.A.	139.05 B
TSURU MARU	JAPAN	124.19 B
- U -		
UNRYU MARU	JAPAN	124.27 A
USHIO	JAPAN	124.05 B
- V -		
VANCOUVER	CANADA	206.08 A
VECTOR	CANADA	106.19 A
VICTOR HENSEN	GERMANY (Federal Republic)	114.06 C
VILNYUS	U.S.S.R.	137.21 K
VITEBSK	U.S.S.R.	137.21 J
- W -		
WACHIBA MARU	JAPAN	124.27 A
WAKACHIBA MARU	JAPAN	124.27 A
WAKATAKA MARU	JAPAN	124.21 A
WAKAYAMA	JAPAN	124.23 A
WALTHER HERWIG	GERMANY (Federal Republic)	114.05 A
		114.07 B
		114.11 C
WEATHERBIRD	U.S.A.	239.13 D
WECOMA	U.S.A.	139.15 E
W. E. RICKER	CANADA	206.08 B
WESTWIND	U.S.A.	139.03 T
WILFRED TEMPLEMAN	CANADA	106.10 H
- X -		
XIANGYANGHONG NO.5	PEOPLE'S REPUBLIC OF CHINA	173.02 B
XIANGYANGHONG NO.14	PEOPLE'S REPUBLIC OF CHINA	173.02 C
XIPHIAS	CUBA	160.02 C
- Y -		
YAKURI	JAPAN	124.23 A
YAKUTAT	U.S.A.	239.07 U
YAQUINA	U.S.A.	139.15 C
YOKO	JAPAN	124.19 B
YOKO MARU	JAPAN	124.23 A
YOSHU MARU	JAPAN	124.23 A



WORLD GEOGRAPHICAL INDEX



GEOGRAPHICAL INDEX - DETAILS OF MEDITERRANEAN AREA



GEOGRAPHICAL INDEX - DETAILS OF INDONESIA AREA

GEOGRAPHICAL INDEX

1. <u>BALTIC SEA</u>	14A. <u>RAFFIN BAY</u>	22. <u>BAY OF BISCAY</u>	106.10 B-06
114.11 B-20	106.05 D-02	114.02 C-18	106.10 B-07
114.11 B-23	139.03 T-03		106.10 H-05
114.11 B-24		23a. <u>NORTH EAST ATLANTIC</u>	106.11 C-28
114.11 C-03	15. <u>DAVIS STRAIT</u>		106.11 C-29
214.01	106.05 D-02	109.02 F-11	106.11 C-30
	109.02 F-11	109.02 J-01	106.11 C-31
4. <u>NORTH SEA</u>	109.02 J-01	114.01 M-45	106.11 C-32
114.01 J-28	114.07 B-12	114.01 M-46	106.11 C-33
114.05 A-17	137.11 L-07	114.01 M-47	106.11 J-18
114.05 C-02	137.11 R-04	114.02 C-18	106.11 J-19
114.06 C-12	137.21 B-04	114.07 B-12	106.11 J-22
114.06 C-13	137.21 H-01	114.07 B-15	106.11 J-23
114.07 B-16	137.21 H-02	114.07 B-16	106.11 J-24
114.11 A-14	137.21 I-01	114.11 A-14	106.11 J-25
114.11 A-15	139.03 T-03	137.04 A-31	106.11 J-26
114.11 B-21		137.06 L-34	106.11 V-08
114.11 B-22	15A. <u>LABRADOR SEA</u>	137.06 L-35	109.02 F-11
114.11 B-23	106.05 D-02	137.15 K-01	109.02 J-01
114.11 C-03	106.05 F-29	138.01 R-03	114.02 C-09
138.01 R-03	106.09 AA-14	139.01 D-46	114.07 B-12
214.01	106.09 AA-15	139.01 I-26	114.07 B-15
	106.09 I-24	139.03 A-03	137.06 L-34
5. <u>GREENLAND SEA</u>	106.10 B-06	139.03 G-06	137.06 L-35
114.05 C-02	106.10 B-07	139.03 H-06	137.06 Y-01
139.03 A-03	106.10 H-06	139.03 T-03	137.11 A-17
139.03 B-15	106.11 C-33		137.11 F-10
	109.02 J-01	23b. <u>NORTH WEST ATLANTIC</u>	137.11 L-07
6. <u>NORWEGIAN SEA</u>	114.07 B-12	106.05 F-29	137.11 L-08
114.01 S-02	137.11 A-17	106.05 G-01	137.11 L-09
114.05 C-02	137.11 F-10	106.09 AA-13	137.11 M-06
139.03 A-03	137.11 L-07	106.09 AA-15	137.11 N-06
139.03 B-15	137.11 L-08	106.09 F-22	137.11 N-07
139.03 G-06	137.11 L-09	106.09 I-24	137.11 R-04
	137.11 M-06	106.09 I-25	137.11 R-05
13. <u>BEAUFORT SEA</u>	137.11 N-07	106.09 I-28	137.21 B-04
106.22 U-01	137.11 R-04	106.09 I-30	137.21 H-01
106.22 U-02	137.11 R-05	106.09 I-31	137.21 H-02
206.05 D-01	137.21 B-04	106.09 I-32	137.21 I-01
206.05 D-02	137.21 H-01	106.09 I-33	137.21 I-02
206.05 D-03	137.21 H-02	106.09 I-36	137.21 I-01
	137.21 I-01	106.09 I-37	139.01 A-15
	137.21 L-01	106.09 I-39	139.01 D-44
	139.03 T-03	106.09 I-40	139.01 D-45
14. <u>THE NORTH- WESTERN PASSAGES</u>	16. <u>HUDSON BAY</u>	106.09 I-41	139.01 D-46
106.05 D-02	106.05 D-02	106.09 I-42	139.01 I-24
206.08 I-01		106.10 A-12	139.01 I-25
		106.10 A-13	139.03 A-03
		106.10 A-14	139.03 G-06
		106.10 A-15	139.03 G-07
			139.03 T-03
			139.05 B-20
			139.12 A-03

GEOGRAPHICAL INDEX

139.12 A-04	106.11 J-18	30. <u>BLACK SEA</u>	45b. <u>NORTH EAST INDIAN OCEAN</u>
139.12 A-05	106.11 J-19	137.06 L-35	124.02 B-59
139.12 C-08	106.11 J-22		124.16 A-30
139.23 A-25	106.11 J-23	32b. <u>SOUTH WEST ATLANTIC</u>	124.27 A-20
139.23 D-30	106.11 J-24	101.01 K-01	124.31 B-03
139.23 G-12	106.11 J-25	101.03 A-01	124.31 B-04
139.23 P-16	106.11 J-26	101.03 A-02	
139.23 P-17	106.11 V-08	101.04 A-05	45c. <u>SOUTH WEST INDIAN OCEAN</u>
153.01 A-07		104.01 A-54	124.31 B-03
153.01 B-12	26. <u>GULF OF MEXICO</u>	104.01 A-55	124.31 B-04
153.01 B-13		104.02 B-04	138.05 B-23
153.01 B-14		104.02 B-05	
153.03 A-02	139.07 A-10	104.02 B-06	45d. <u>SOUTH EAST INDIAN OCEAN</u>
153.03 A-03		104.02 B-07	124.31 B-03
239.07	27. <u>CARIBBEAN SEA</u>	104.02 B-08	124.31 B-04
239.07 K-25		114.01 M-45	
239.07 U-15	139.31 C-01	114.01 M-46	
239.13 A-03	153.01 A-06	114.01 M-47	
239.13 C-02	153.01 A-07	114.07 B-13	
239.13 D-01	153.01 B-08	114.07 B-17	46a. <u>MALACCA STRAIT</u>
	153.01 B-09	139.01 C-44	124.31 B-04
24. <u>GULF OF ST. LAWRENCE</u>	153.01 B-10		
106.09 I-24	153.01 B-11	34. <u>GULF OF GUINEA</u>	48m. <u>MAKASSAR STRAIT</u>
106.09 I-25	153.01 B-12	116.01 E-03	124.31 B-04
106.09 I-26	153.01 B-13	116.01 E-04	
106.09 I-27	153.01 B-14	116.01 E-05	
106.09 I-28	153.01 B-15	116.01 E-06	48n. <u>JAVA SEA</u>
106.09 I-29	153.03 A-01	116.01 E-07	124.31 B-04
106.09 I-34	153.03 A-02		
106.09 I-38	153.03 A-03	39. <u>ARABIAN SEA</u>	
106.09 I-39	153.03 A-04	138.10 B-03	49. <u>SOUTH CHINA SEA</u>
106.09 I-41	153.04 A-01	138.10 B-04	124.31 B-04
106.09 I-42	153.04 A-02		139.03 HH-01
106.09 P-05	160.02 C-01	40. <u>GULF OF OMAN</u>	
106.11 C-28	28A. <u>MEDITERRANEAN SEA - WESTERN BASIN</u>	138.10 B-03	50. <u>EASTERN CHINA SEA</u>
106.11 C-30			124.01 B-83
106.11 J-18		45a. <u>NORTH WEST INDIAN OCEAN</u>	124.01 F-28
106.11 J-19			124.05 B-25
106.11 J-20			124.09 A-90
106.11 J-21	28B. <u>MEDITERRANEAN SEA - EASTERN BASIN</u>		124.10 D-78
106.11 J-22			124.10 D-79
106.11 V-08			124.16 A-30
			124.19 B-25
25. <u>BAY OF FUNDY</u>			124.23 A-28
106.09 I-24	137.06 L-34		
106.09 I-27	137.06 L-35		
106.09 I-31	28Bh. <u>AEGEAN SEA</u>		
106.09 I-35			
106.09 I-41			
106.11 C-29	137.06 L-35		
106.11 C-30			

GEOGRAPHICAL INDEX

139.03 HH-01	124.02 C-12	139.23 Y-18	66. <u>BISMARCK</u>
143.02 T-04	124.05 B-25	139.23 Y-19	<u>SEA</u>
243.01 A-33	124.09 A-90	173.02 C-01	124.01 B-83
243.01 C-17	124.09 A-91	206.04 A-07	
51. <u>YELLOW SEA</u>	124.10 D-79	206.04 A-09	SO. <u>SOUTHERN</u>
124.01 B-83	124.23 A-28	206.08 A-04	<u>OCEANS</u>
143.02 R-14	124.24 B-48	206.08 A-06	<u>(South of</u>
143.02 T-04	124.24 B-49	206.08 A-18	<u>latitude</u>
143.02 V-04	124.27 A-20	206.08 A-21	<u>50°S)</u>
143.02 Y-02	124.31 B-04	206.08 B-06	114.07 B-13
243.01 A-33	139.03 HH-01	206.08 B-07	114.07 B-17
243.01 C-17	173.02 B-01	206.08 B-08	124.31 B-03
	173.02 C-01	206.08 B-09	124.31 B-04
52. <u>JAPAN SEA</u>	57a. <u>NORTH WEST</u>	206.08 B-10	138.05 B-23
124.01 F-27	<u>PACIFIC</u>	206.08 B-11	139.01 C-44
124.02 B-59	124.01 B-83	206.08 E-08	
124.02 C-12	124.01 B-84	206.08 E-09	
124.08 D-75	124.01 F-27	206.08 E-10	
124.10 D-79	124.01 F-28	239.02	
124.11 D-65	124.02 B-59	59. <u>THE COASTAL</u>	
124.11 D-66	124.02 C-12	<u>WATERS OF</u>	
124.19 B-25	124.05 B-25	<u>SOUTH EAST</u>	
124.20 A-25	124.08 D-75	<u>ALASKA AND</u>	
124.21 A-27	124.16 A-30	<u>BRITISH</u>	
124.22 A-25	124.20 A-25	<u>COLUMBIA</u>	
143.02 R-14	124.21 A-27	106.19 A-07	
143.02 T-04	124.24 B-49	106.19 F-06	
143.02 U-04	124.27 A-20	106.22 A-06	
143.02 X-02	173.02 B-01	106.22 A-07	
243.01 A-33	173.02 C-01	61a. <u>SOUTH WEST</u>	
243.01 C-17	57b. <u>NORTH EAST</u>	<u>PACIFIC</u>	
53. <u>INLAND SEA</u>	<u>PACIFIC</u>	124.01 B-83	
124.23 A-28	106.19 A-07	139.23 A-26	
54. <u>SEA OF</u>	106.19 F-06	173.02 C-01	
<u>OKHOTSK</u>	106.22 A-06		
124.08 D-75	106.22 A-07	61b. <u>SOUTH EAST</u>	
55. <u>BERING SEA</u>	106.22 N-02	<u>PACIFIC</u>	
124.02 B-59	106.22 N-03	139.05 C-03	
56. <u>PHILIPPINE</u>	106.22 W-01	139.05 C-04	
<u>SEA</u>	124.02 B-59	139.15 E-13	
124.01 B-83	124.16 A-30	139.15 E-14	
124.01 B-84	124.27 A-20	139.23 A-26	
124.01 F-27	139.08 V-09	139.23 A-27	
	139.15 C-10	139.23 K-21	
	139.15 C-14	139.23 K-22	
	139.23 A-26	139.23 L-18	
	139.23 A-27	173.02 B-01	
	139.23 K-21		
	139.23 K-22		
	139.23 L-18		

NUMERICAL LIST OF COUNTRIES

1. ARGENTINA	39. UNITED STATES OF AMERICA
2. AUSTRALIA	40. URUGUAY
3. BELGIUM	42. YUGOSLAVIA
4. BRAZIL	43. KOREA (Republic of)
5. BURMA	44. IVORY COAST
6. CANADA	45. NIGERIA
7. CHILE	46. CONGO (People's Republic)
8. COLOMBIA	47. MALAYSIA
9. DENMARK	48. MALAGASY REPUBLIC
10. ECUADOR	49. MOROCCO
11. FINLAND	50. SENEGAL
12. TAIWAN	51. THAILAND
13. FRANCE	52. TURKEY
14. GERMANY (Federal Republic)	53. VENEZUELA
15. GERMANY (Democratic Republic)	54. EL SALVADOR
16. GHANA	55. COSTA RICA
17. GUATEMALA	56. PANAMA
18. ICELAND	57. HONDURAS
19. INDIA	58. DOMINICAN REPUBLIC
20. INDONESIA	59. HAITI
21. IRELAND	60. CUBA
22. ISRAEL	61. JAMAICA
23. ITALY	62. AUSTRIA
24. JAPAN	63. ROMANIA
25. MEXICO	64. ARAB REPUBLIC OF EGYPT
26. NETHERLANDS	65. LEBANON
27. NEW ZEALAND	66. ALGERIA
28. NORWAY	67. MONACO
29. PAKISTAN	68. GREECE
30. PERU	69. TANZANIA
31. PHILIPPINES	70. SIERRA LEONE
32. POLAND	71. TUNISIA
33. PORTUGAL	72. TRINIDAD AND TOBAGO
34. SPAIN	73. PEOPLE'S REPUBLIC OF CHINA
35. SWEDEN	74. CZECHOSLOVAKIA
36. SOUTH AFRICA	75. MAURITANIA
37. UNION OF SOVIET SOCIALIST REPUBLICS	76. BULGARIA
38. UNITED KINGDOM	77. BENIN

LIST OF INITIALS OF DATA CENTERS

AODC	Australian Oceanographic Data Centre
BNDO	Bureau National des Donnees Oceaniques, France
CEADO	Centro Argentino de Datos Oceanograficos
CECOLDO	Centro Colombiano de Datos Oceanograficos
CEDO	Centro Espanol de Datos Oceanograficos
CENADO	Centro Nacional de Datos Oceanograficos, Mexico
CENDOC	Centro Nacional de Datos Oceanograficos de Chile
CNODC	China National Oceanographic Data Center
CNRDO	Centro Nazionale Raccolta Dati Oceanografici, Italy
DOD	Deutsches Ozeanographisches Datenzentrum
ENODC	Egyptian National Oceanographic Data Center
FAOFDC	Food and Agriculture Organization of the United Nations, Fishery Data Centre
ICES	International Council for the Exploration of the Sea
IHO	International Hydrographic Organization
INODC	Indian National Oceanographic Data Center
JODC	Japan Oceanographic Data Center
KODC	Korean Oceanographic Data Center
MEDS	Marine Environmental Data Service, Canada
MIAS	Marine Information and Advisory Service, United Kingdom
NCOG	Nederlands Centrum voor Oceanografische Gegevens
NOD	Norsk Oseanografisk Datasenter
NODC	National Oceanographic Data Center, U.S.A.
PSMSL	Permanent Service for Mean Sea Level
SADCO	South African Data Centre for Oceanography

INSTITUTION INDEX

COUNTRY	INSTITUTION	CATALOGUE NUMBER	
01 ARGENTINA	Servicio de Hidrografia Naval.....	101.01	
	National Institute of Fishing Research & Development.....	101.03	
	Centro Nacional Patagonico.....	101.04	
04 BRAZIL	Diretoria de Hidrografia Navegacao.....	104.01	
	Universidade de Sao Paulo, Instituto Oceanografico.....	104.02	
06 CANADA	Fisheries Research Board of Canada Atlantic Oceanographic Group.....	106.05	
	Bedford Institute of Oceanography.....	106.09	
	Fisheries Research Board of Canada, Biological Station, St. John's, Nfld.....	106.10	
	Fisheries Research Board of Canada, Biological Station, St. Andrews, N.B.....	106.11	
	University of British Columbia Institute of Oceanography.....	106.19	
	Department of Fisheries & Oceans Institute of Ocean Sciences.....	106.22	206.08
09 DENMARK	Danmarks Fiskeri-og Havundersogelser....	109.02	
14 GERMANY (Federal Republic)	Deutsches Hydrographisches Institut....	114.01	214.01
	Institut fur Meereskunde der Universitat Kiel.....	114.02	
	Bundesforschungsanstalt fur Fischerei...	114.05	
	Institut fur Meeresforschung.....	114.06	
	Institut fur Seefischerei.....	114.07	
	Institut fur Kusten-und Binnenfischerei der BFA.....	114.11	
16 GHANA	Fishery Research Unit.....	116.01	
24 JAPAN	Japan Meteorological Agency.....	124.01	224.01
	Hokkaido University.....	124.02	
	Tokai Regional Fisheries Research Laboratory.....	124.05	
	Hakodate Marine Observatory.....	124.08	
	Kobe Marine Observatory.....	124.09	
	Nagasaki Marine Observatory.....	124.10	
	Maizuru Marine Observatory.....	124.11	
	Shimonoseki University of Fisheries.....	124.16	

INSTITUTION INDEX

COUNTRY	INSTITUTION	CATALOGUE NUMBER
	Seikai Regional Fisheries Research Laboratory.....	124.19
	Hokkaido Regional Fisheries Research Laboratory.....	124.20
	Tohoku Regional Fisheries Research Laboratory.....	124.21
	Nihonkai Regional Fisheries Research Laboratory.....	124.22
	Nansei Regional Fisheries Research Laboratory.....	124.23
	University of Tokyo.....	124.24
	Enryo Regional Fisheries Research Laboratory.....	124.27
	National Institute of Polar Research....	124.31
37 UNION OF SOVIET SOCIALIST REPUBLICS	Marine Hydrophysical Institute.....	137.04
	Hydrometeorological Service.....	137.06
	Polar Research Institute of Marine Fisheries and Oceanography (PINRO)....	137.11
	Hydrographic Office of the USSR Navy....	137.15
	Ministry of Fisheries of the USSR.....	137.21
38 UNITED KINGDOM	Fisheries Laboratory, Lowestoft.....	138.01
	National Institute of Oceanography.....	138.05
	Natural Environment Research Council....	138.10
39 UNITED STATES	Woods Hole Oceanographic Institution....	139.01
	Naval Oceanographic Office.....	139.03
	University of Rhode Island.....	139.05
	Texas A&M University.....	139.07
	Scripps Institution of Oceanography.....	139.08 239.02
	Coast and Geodetic Survey.....	139.12
	Oregon State University.....	139.15
	National Oceanic & Atmospheric Administration.....	139.23
	University of Puerto Rico, Institute of Marine Biology.....	139.31
43 KOREA	Fisheries Research and Development Agency.....	143.02 243.01
53 VENEZUELA	Instituto Oceanografico, Universidad de Oriente.....	153.01
	Margarita Marine Research Station.....	153.03
	Fish & Game Biological Laboratory (Caiguire-Cumana).....	153.04

INSTITUTION INDEX

COUNTRY	INSTITUTION	CATALOGUE NUMBER
60 CUBA	Academia de Ciencias de Cuba, Instituto de Oceanologia.....	160.02
73 PEOPLE'S REPUBLIC OF CHINA	First Institution of Oceanography.....	173.02

PART II
CATALOGUE

EXPLANATION OF WDC-A, OCEANOGRAPHY, DATA INFORMATION SHEET

The Change Notice lists on Data Information sheets the data which have been received by this Center. The entries are described below. Countries are arranged in the sequence shown in the numerical list of countries. Data from each country are arranged in the sequence of catalogue numbers. The 200-series data sheets follow the last 100-series data sheet in the catalogue.

Country/Catalogue Number -- The series number and two digit number of the contributing country, as well as the identifying number for the data information, are given in this column. Details of the catalogue numbering system are given in the section How to Use the Change Notice to the Catalogue of Data. The numbers corresponding to the country and institution portions of the Catalogue Number are found in the index section that lists countries and contributing institutions.

Country/Ship or Fixed Station -- The country name, as well as the names of ships are printed in capital letters; lightvessels are identified by (LV) following the name. All other names not so designated are those of shore stations and other types of fixed platforms, such as lighthouses (LH) or offshore towers; names are reported as they appear with the data.

Start Date/End Date -- The dates during which the data were gathered are given in the order of day/month/year. In some instances, depending on the nature of the project, the dates indicate the beginning and ending of a cruise or expedition, while in others the dates indicate the first and last observations. For shore and fixed stations months and years only are usually given.

Region -- The region(s) of the World Ocean where observations were gathered. The areas listed are defined in "Limits of Oceans and Seas," International Hydrographic Bureau, Special Publication No. 23, third edition, Monaco, 1953, with certain modifications as indicated in the Catalogue Indexes section.

Oceanographic Serial Stations

Number of Stations -- The number of oceanographic serial stations (also referred to as hydrographic, hydrographical, hydrological and hydrochemical stations by various authorities) at which serial measurements of temperature, salinity, and other chemical values are made, normally to depths of five meters or greater. Data to depths less than five meters are usually catalogued as Surface Observations. The single dagger symbol (†) is used to denote data obtained by electronic, in-situ, Salinity/Temperature/Depth (STD) or Conductivity/Temperature/Depth (CTD) sensors.

Physical and Chemical Data -- The types of physical and chemical data, available at serial depths as observed and as computed values, are listed using the following symbols and abbreviations:

T	-	Temperature of the water sample
Cl	-	Chlorinity
S	-	Salinity
Oxy	-	Dissolved oxygen content
CO ₂	-	Carbon dioxide
pH	-	Hydrogen ion concentration
Alk	-	Alkalinity
N	-	Nitrogen compounds
P	-	Phosphorous compounds
Si	-	Silicon compounds
sig-t	-	Density of the water at T & S <u>in-situ</u> and at atmospheric pressure
SVA	-	Anomaly of specific volume
TherAnom	-	Thermosteric anomaly
ΔD	-	Anomaly of dynamic heights
PE	-	Potential energy
PT	-	Potential temperature
Q	-	Q factor for transport computations
Vs	-	Speed of sound

NOTE: Chemical compounds may also be indicated by standard chemical symbols.

Sample Depths -- The depth, or range of depths, to which the predominant number of samples/casts for that particular cruise were observed. They are recorded to the nearest 100 meters, except when the observations are in water less than 100 meters in depth, in which case they are usually recorded to the nearest 10 meters.

Maximum Depth -- The actual depth of the deepest sample/cast for a particular cruise or data set and is not rounded off.

BT's -- The type and number of mechanical bathythermograph (MBT) or expendable bathythermograph (XBT) observations are indicated by:

MB	-	Analog prints of bathythermographs taken by a mechanical BT
MTb	-	Tables or listings of mechanical BT temperature readings at selected depths
XB	-	Analog prints of bathythermographs taken by an expendable BT
XTb	-	Tables or listings of expendable BT temperature readings at selected depths

DTb - Table or listings of digital BT temperature readings at selected depths

Currents -- The types and quantity of observations of surface and subsurface currents are indicated by:

Surf - Surface
Subs - Subsurface

Biological -- The types of marine biological observations made and the number of stations and/or abundance of data are indicated by any of the following categories:

Phyt - Phytoplankton
Pigm - Pigments
PrPr - Primary productivity
Zoo - Zooplankton
Nek - Nekton
Eggs - Fish eggs and/or larvae
Neus - Neuston
Pleu - Pleuston
Sest - Seston
Bent - Benthos
PeF - Pelagic fishes
DeF - Demersal fishes
Cet - Cetacea
Micr - Microbiological data
Biol - Bioluminescence
Poll - Pollution studies
Surf - Surface visual observations of birds, fishes mammals, reptiles and discolored water
FObs - Fishery observations
C14 - Carbon
Bore - Borers and foulers

Meteorological -- The types of meteorological observations taken in conjunction with oceanographic data are indicated by:

Wd - Wind direction and speed
W - Weather
Ta - Temperature of the air, dry bulb
Tw - Temperature of the air, wet bulb
Bar - Atmospheric pressure, barometer
Cld - Clouds
Vis - Visibility
Hum - Humidity
DP - Dew point
Pre - Precipitation
SoRa - Solar radiation
Rad - Radiosonde observations

Sea Surface -- The types of sea surface observations and measurements taken are listed. In addition to the abbreviations and symbols listed for Physical and Chemical Data, the following

are also used:

- Col - Color of the water
- Tra - Transparency of the water
 - Wa - Visual data on waves, including sea state
- IWa - Instrumented wave data
- Ice - Data on ice in the sea
 - LP - Light penetration
- LPW - Long period wave records

Data Center Reference Number -- Data which have been processed by Automatic Data Processing (ADP) machine methods at a national, regional, or responsible oceanographic data center, usually have been assigned some type of identifying reference number by that center. The availability of data in magnetic tape or machine listing format is indicated by the initials of the data center followed by that center's reference number. For example, machine-processed oceanographic station data for Reference Number 310863 of the National Oceanographic Data Center would appear as NODC 310863. As a means of identifying those types of data that have been machine-processed and thus correspond to the Reference Number, the Diamond symbol () is entered in the appropriate columns describing data that are automated under that Reference Number.

Publication number refers to the Catalogue Number from the WDC-A, Oceanography Catalogue of Accessioned Publications Supplement identifying the published report in which the referenced data appear. The absence of a number in this column indicates that the data were not received in published form.

Remarks -- Any additional information included to further describe the data. The term "(CAT. OF DATA)" or "(Change)", indicates that data for this listed cruise represent an addition to data previously received by WDC-A, Oceanography, and already described under this Catalogue Number in the Catalogue of Data (including Change Notice Nos. 1-16) or the referenced Change Notice. An asterisk (*) is placed beside each data entry which represents an addition to data catalogued previously; the total number of observations held for this cruise is shown in parentheses () beneath the data entry. Data entries preceded by a minus sign (-) and enclosed in parentheses, e.g. (-9), indicate a deletion of observations. For more extensive explanation of some cruises, the Remarks Section immediately follows the main Catalogue Section in this Change Notice.

NOTE: Track charts showing locations of oceanographic observations are not printed in the Change Notice. If a track chart is available for a particular cruise, that information will be given in the Remarks Section of this Change Notice. WDC-A will gladly provide copies of such track charts upon request.

WDC-A, OCEANOGRAPHY DATA INFORMATION

COUNTRY/ CATALOGUE NUMBER	COUNTRY/ SHIP OR FIXED STATION	START DATE	END DATE	IHB REG.	TYPES OF				OBSERVATIONS				DATA CENTER REFERENCE NUMBER	REMARKS
					OCEANOGRAPHIC NO. OF STAS.	PHYS. & CHEM DATA	SERIAL SAMPLE DEPTHS	MAX. DEPTH	BATHY- THERMO- GRAPH	CURRENTS	BIO- LOGICAL	METEORO- LOGICAL	SEA SURFACE	
101.....	ARGENTINA.....													
101.01 K-01	PUERTO DESEADO	07/11/84	12/11/84	32b	6	(T, S, sig-t, SVA, AD, Vs, PO4, NO3, SIO4) 0	1700, 3900	3932						NODC 081023 Cruise Pto. Deseado 2/84
101.03 A-01	OCA BALDA	18/06/85	22/06/85	32b	7	(T, S, sig-t, SVA, AD, Vs) 0	680-1060	1192						NODC 081021 Cruise OCA BALDA 4/85
101.03 A-02	OCA BALDA	22/03/86	25/03/86	32b	8	(T, S, sig-t, SVA, AD, Vs, PO4, NO3, SIO4) 0	300-1000	1286						NODC 081022 Cruise OCA BALDA 2/86
101.04 A-05	EL AUSTRAL	15/01/83	12/04/83	32b	51	(T, S, sig-t, SVA, AD, Vs, Oxy, PO4, NO2, NO3) 0	20-150	160						NODC 081024, 081025 Cruises AUSTRAL 4 & 5 Period: 15-19/1/83 and 8-12/4/83
104.....	BRAZIL.....													
104.01 A-54	ALMIRANTE SALDANHA	22/03/87	16/12/87	32b	109	(T, S, sig-t, SVA, AD, Vs) 0	10-1250	1863						NODC 141004, 141008, 141009, 141010 Cruises 130, 135, 137, 138 Period: 22-26/3/87 and 28/9-16/12/87
104.01 A-55	ALMIRANTE SALDANHA	25/04/87	27/06/87	32b	173	(T, S, sig-t, SVA, AD, Vs) 0	20-1400	1403						NODC 141005, 141006 Cruises 131, 132, 133, 134
104.02 B-04	PROFESSOR W. BESNARD	17/01/69	17/12/69	32b	204	(T, S, sig-t, SVA, AD, Vs, Oxy) 0	10-2000	2000						NODC 141011-141017
104.02 B-05	PROFESSOR W. BESNARD	21/08/71	24/08/71	32b	5	(T, S, sig-t, SVA, AD, Vs, Oxy) 0	50-100	100						NODC 141019
104.02 B-06	PROFESSOR W. BESNARD	16/01/72	01/02/72	32b	61	(T, S, sig-t, SVA, AD, Vs, Oxy) 0	10-300	2600						NODC 141020
104.02 B-07	PROFESSOR W. BESNARD	12/12/87	16/12/87	32b	57	(T, S, sig-t, SVA, AD, Vs, Oxy) 0	10-300	373						NODC 141021
104.02 B-08	PROFESSOR W. BESNARD	04/02/71	14/02/71	32b	21	(T, S, sig-t, SVA, AD, Vs, Oxy) 0	50-700	1950						NODC 141018

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†† FOR ADDITIONAL DESCRIPTIVE REMARKS PLEASE SEE THE REMARKS SECTION.

WDC-A, OCEANOGRAPHY DATA INFORMATION

COUNTRY/ CATALOGUE NUMBER	COUNTRY/ SHIP OR FIXED STATION	START DATE	END DATE	IHB REG.	TYPES OF OBSERVATIONS					DATA CENTER REFERENCE NUMBER	REMARKS			
					OCEANOGRAPHIC	SERIAL	STATIONS	BATHY- THERMO- GRAPH	CURRENTS			BIO- LOGICAL	METEORO- LOGICAL	SEA SURFACE
106.05 D-02	LABRADOR	01/07/57	01/10/57	14 14A 15 15A 16	161	(T, S, sig-t, AD, Vs) 0	20-700	1000			(Wd, Ta, Tw, Cld) 0	Wa 0	NODC 180573	
106.05 F-29	SACKVILLE	10/08/59	20/08/59	15A 23b	24	(T, S, sig-t, AD, Vs) 0	200-1500	1512			(Wd, Wa, Ta, Cld) 0	Wa 0	NODC 1880882	
106.05 G-01	LAWRENCE	23/06/66	29/07/66	23b	191	(T, S, sig-t, AD, Vs) 0	40-275	275			(Wd, W, Ta, Cld, Bar) 0	(T, S, sig-t, Vs)-30 0 Wa 0	NODC 180348, 180349, 180352	
106.09 F-22	HUDSON	17/05/76	23/05/76	23b	40 †	(T, S, SVA, sig-t, Vs) 0	40-250	257				(T, S, sig-t, SVA, AD, Vs)-1 0	NODC 188315	Cruise 76013
106.09 I-24	DAWSON	09/06/80	02/12/80	15A 23b 24 25	455 †	(T, S, sig-t, SVA, AD, Vs) 0	45-500	803					NODC 188274-188277, 188279, 188281-188282	
106.09 I-25	DAWSON	23/10/81	29/10/81	23b 24	24 †	(T, S, sig-t, AD, Vs) 0	50-450	462					NODC 188285	
106.09 I-26	DAWSON	11/04/82	20/04/82	24	119 †	(T, S, sig-t, SVA, AD, Vs) 0	15-300	318					NODC 188286, 188287	
106.09 I-27	DAWSON	13/04/83	07/12/83	24 25	144 †	(T, S, sig-t, SVA, AD, Vs) 0	10-400	462				(T, S, sig-t, SVA, AD, Vs)-3 0	NODC 188289, 188292	Period: 13-16/4/83 and 2-7/12/83
106.09 I-28	DAWSON	25/01/84	20/08/84	23b 24	201 †	(T, S, sig-t, SVA, AD, Vs) 0	40-500	1009					NODC 188294-188296, 188300	Period: 25/1-19/6/84 and 19-20/8/84
106.09 I-29	DAWSON	26/06/75	21/07/75	24	1,226 †	(T, S, sig-t, SVA, AD, Vs) 0	10-330	346				(T, S, sig-t, SVA, AD, Vs)-7 0	NODC 188312	
106.09 I-30	DAWSON	14/10/76	07/11/76	23b	43 †	(T, S, sig-t, SVA, AD, Vs) 0	140-2500	2525					NODC 188318, 188319	Cruises 33, 34
106.09 I-31	DAWSON	01/06/77	27/09/77	23b 25	785 †	(T, S, sig-t, SVA, AD, Vs) 0	20-600	679				(T, S, sig-t, SVA, AD, Vs)-38 0	NODC 188320-188323	Cruises 77-13, -17, -23, -28
106.09 I-32	DAWSON	15/11/79	21/11/79	23b	52 †	(T, S, sig-t, SVA, AD, Vs) 0	100-260	264					NODC 188324	Cruise 31

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WDC-A, OCEANOGRAPHY DATA INFORMATION

TYPES OF OBSERVATIONS														
COUNTRY/ CATALOGUE NUMBER	COUNTRY/ SHIP OR FIXED STATION	START DATE	END DATE	IHB REG.	OCEANOGRAPHIC NO. OF STAS.	SERIAL STATIONS		BATHY- THERMO- GRAPH	CURRENTS	BIO- LOGICAL	METEORO- LOGICAL	SEA SURFACE	DATA CENTER REFERENCE NUMBER	REMARKS
						PHYS. & CHEM. DATA	SAMPLE DEPTHS							
106.09 I-33	DAWSON	05/11/80	07/11/80	23b	11 †	(T, S, SVA, AD, Vs) ∅	2380-2490	2506					NODC 188280	Cruise 38
106.09 I-34	DAWSON	04/01/75	15/01/75	24	389 †	(T, S, SVA, AD, Vs) ∅	12-490	495				(T, S, sig-t, SVA, AD, Vs) -9 ∅	NODC 188247	Cruise 75001
106.09 I-35	DAWSON	11/07/84	14/07/84	25	138 †	(T, S, SVA, AD, Vs) ∅	11-165	184					NODC 188297	Cruise 84025
106.09 I-36	DAWSON	05/04/76	07/10/76	23b	508 †	(T, S, SVA, AD, Vs) ∅	80-1200	1496					NODC 188314, 188317	Cruises 76005 & 76030 Period: 5-13/4/76 and 28/9-7/10/76
106.09 I-37	DAWSON	04/01/78	05/01/78	23b	17 †	(T, S, SVA, AD, Vs) ∅	100-500	990					NODC 188369	Cruise 78001
106.09 I-38	DAWSON	26/07/82	04/08/82	24	89 †	(T, S, SVA, AD, Vs) ∅	30-430	474					NODC 188370	Cruise 82026
106.09 I-39	DAWSON	25/04/73	23/05/73	23b 24	459 †	(T, S, SVA, AD, Vs) ∅	10-460	485					NODC 188366	Cruise 73012
106.09 I-40	DAWSON	07/11/83	10/11/83	23b	15 †	(T, S, SVA, AD, Vs) ∅	50-130	152					NODC 188371	Cruise 83034
106.09 I-41	DAWSON	27/04/85	14/12/85	23b 24 25	270 †	(T, S, SVA, AD, Vs) ∅	35-1000	1158					NODC 188373, 188375, 188377, 188378, 188379	Cruises 85008, -024, -039, -040, -041
106.09 I-42	DAWSON	02/04/86	21/11/86	23b 24	190 †	(T, S, SVA, AD, Vs) ∅	35-590	925					NODC 188382-188385	Cruises 85001, -05, -031, -037 Period: 2-25/4/86 and 10/10-21/11/86
106.09 P-05	NAVICULA	10/09/73	16/10/73	24	339	(T, S, SVA, AD, Vs) ∅	5-20	20				(T, S, sig-t, SVA, AD, Vs) -14 ∅	NODC 188308	
106.09 AA-13	GADUS ATLANTICA	25/04/81	11/05/81	23b	65	(T, S, SVA, AD, Vs) ∅	80-500	513					NODC 188341	
106.09 AA-14	GADUS ATLANTICA	03/12/86	12/12/86	15A	1	(T, S, SVA, AD, Vs) ∅	156	156				(T, S, sig-t, SVA, AD, Vs) -1 ∅ ††	NODC 188342	
106.09 AA-15	GADUS ATLANTICA	31/01/87	24/11/87	23b 15A	23	(T, S, SVA, AD, Vs) ∅	80-500	951					NODC 188343-188352	

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WDC-A. OCEANOGRAPHY DATA INFORMATION

				TYPES		OF				OBSERVATIONS						
COUNTRY/ CATALOGUE NUMBER	COUNTRY/ SHIP OR FIXED STATION	START DATE	END DATE	IHB REG.	OCEANOGRAPHIC		SERIAL	STATIONS		BATHY- THERMO- GRAPH	CURRENTS	BIO- LOGICAL	METEORO- LOGICAL	SEA SURFACE	DATA CENTER REFERENCE NUMBER	REMARKS
					NO. OF STAS.	PHYS. & CHEM. DATA		SAMPLE DEPTHS	MAX. DEPTH							
106.10 A-12	INVESTIGATOR II	17/02/66	14/12/66	23b	23	(T, S, sig-t, AD, Vs) 0	167-172	172					(Wd, W, Ta, Cld, Bar) 0	Wa 0	NODC 181247	
106.10 A-13	INVESTIGATOR II	10/01/67	19/12/67	23b	24	(T, S, sig-t, AD, Vs) 0	167-172	174					(Wd, W, Ta, Tw, Cld, Bar) 0	Wa 0	NODC 181248	
106.10 A-14	INVESTIGATOR II	10/01/68	19/12/68	23b	30	(T, S, sig-t, AD, Vs) 0	167-174	174					(Wd, W, Ta, Tw, Cld, Bar) 0	Wa 0	NODC 181249	
106.10 A-15	INVESTIGATOR II	28/01/70	16/12/70	23b	25	(T, S, sig-t, AD, Vs) 0	167-173	174					(Wd, W, Ta, Tw, Cld, Bar) 0	Wa 0	NODC 181251	
106.10 B-06	CAPE FREELS	09/08/74	28/08/74	15A 23b	92	(T, S, sig-t, AD, Vs) 0	80-700	1000					(Wd, W, Ta, Tw, Cld, Bar) 0	Wa 0	NODC 181210, 181211	Period: 12/2/87, 4/4-2/6/87 and 15/10/87
106.10 B-07	CAPE FREELS	22/07/75	04/08/75	15A 23b	49	(T, S, sig-t, AD, Vs) 0	55-1000	1000					(Wd, W, Ta, Tw, Cld, Bar) 0	Wa 0	NODC 181212	
106.10 H-05	WILFRED TEMPLEMAN	12/02/87	15/10/87	23b	9	(T, S, sig-t, SVA, AD, Vs) 0	161-173	173						(T, S, sig-t, SVA, AD, Vs)-2 0 tt	NODC 188354-188358 188361	
106.10 H-06	WILFRED TEMPLEMAN	25/09/87	07/10/87	15A	5	(T, S, sig-t, SVA, AD, Vs) 0	166-241	819							NODC 188360	
106.11 C-28	A. T. CAMERON	17/05/79	09/10/79	23b 24										(T, S, sig-t, SVA, AD, Vs)-163 0 tt	NODC 188094, 188095	Period: 17/5-4/6/79 and 24/9-9/10/79
106.11 C-29	A. T. CAMERON	13/07/75	06/08/75	23b 25	144	(T, S, sig-t, AD, Vs) 0	80-350	350							NODC 181205, 181206	
106.11 C-30	A. T. CAMERON	20/02/76	05/08/76	23b 24 25	172	(T, S, sig-t, AD, Vs) 0	40-300	336							NODC 181235, 181238, 181257	Period: 20-27/2/76 and 13/7-5/8/76
106.11 C-31	A. T. CAMERON	22/03/77	30/03/77	23b	52	(T, S, sig-t, AD, Vs) 0	75-180	186						(T, S, sig-t, AD, Vs)-1 0	NODC 181258	
106.11 C-32	A. T. CAMERON	19/11/81	19/11/81	23b	37	(T, S, sig-t, SVA, AD, Vs) 0	25-250	310					(Wd, Ta, Tw, Bar) 0	(T, S, sig-t, Vs)-82 0 tt	NODC 181295, 181505, 181508 181510, 181514 181520, 181523	

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WDC-A. OCEANOGRAPHY DATA INFORMATION

COUNTRY/ CATALOGUE NUMBER		COUNTRY/ SHIP OR FIXED STATION	START DATE	END DATE	IHB REG.	TYPES OF STATIONS				OBSERVATIONS				DATA CENTER REFERENCE NUMBER	REMARKS
						NO. OF STAS.	PHYS. & CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH	BATHY- THERMO- GRAPH	CURRENTS	BIO- LOGICAL	METEORO- LOGICAL		
106.11	C-33	A. T. CAMERON	19/02/82	09/06/82	15A 23b	54	(T, S, sig-t, SVA, AD, Vs) Ø	50-450	458			(Wd, Ta, Tw, Bar) Ø	(T, S, sig-t, AD, Vs) -100 Ø	NODC 181536, 181539, 181540 181543, 181544	Period: 20-28/5/75 and 3/9-13/11/75
106.11	J-18	E. E. PRINCE	20/05/75	13/11/75	23b 24 25	119	(T, S, sig-t, AD, Vs) Ø	20-245	245					NODC 181204, 181208, 181233 187024	
106.11	J-19	E. E. PRINCE	24/03/76	23/11/76	23b 24 25	70	(T, S, sig-t, AD, Vs) Ø	20-250	260				(T, S, sig-t, AD, Vs) -283 Ø ††	NODC 181237, 181239, 181240 AD, Vs) 181280, 187025	
106.11	J-20	E. E. PRINCE	02/05/77	02/06/77	24	18	(T, S, sig-t, AD, Vs) Ø	40-140	300				(T, S, sig-t, AD, Vs) -55 Ø	NODC 181259	
106.11	J-21	E. E. PRINCE	11/06/80	15/07/80	24	44	(T, S, sig-t, SVA, AD, Vs) Ø	15-140	450				(T, S, sig-t, SVA, AD, Vs)-145 Ø	NODC 181286- 181288	Period: 3-13/3/81 and 2/9-22/11/81
106.11	J-22	E. E. PRINCE	03/03/81	22/11/81	23b 24 25	67	(T, S, sig-t, SVA, AD, Vs) Ø	20-250	276				(T, S, sig-t, SVA, AD, Vs)-306 Ø	NODC 181293, 181298, 187026	
106.11	J-23	E. E. PRINCE	09/03/82	20/05/82	23b 25							(Wa, Ta) Ø	(T, S, sig-t, AD, Vs) -185 Ø	NODC 187027, 187028	Period: 9-18/3/82 and 7-20/5/82
106.11	J-24	E. E. PRINCE	01/11/83	12/11/83	23b 25	159	(T, S, sig-t, SVA, AD, Vs) Ø	10-200	213					NODC 181491	
106.11	J-25	E. E. PRINCE	17/06/84	15/11/84	23b 25	120	(T, S, sig-t, SVA, AD, Vs) Ø	20-250	283			(Wd, Ta, Bar) Ø	(T, S, sig-t, Vs)-134 Ø ††	NODC 188015, 188161	Period: 17-27/6/84 and 2-15/11/84
106.11	J-26	E. E. PRINCE	22/10/85	13/11/85	23b 25	241	(T, S, sig-t, SVA, AD, Vs) Ø	50-200	270					NODC 188090	
106.11	V-08	ALFRED NEEDLER	29/06/87	06/08/87	23b 24 25	219 +	(T, S, sig-t, SVA, AD, Vs) Ø	30-366	375				(T, S, sig-t, SVA, AD, Vs)-2 Ø	NODC 188338- 188340	Cruises 87-01, 87-02, 87-03
106.19	A-07	VECTOR	13/01/71	09/12/71	57b 59	-10 * (158)								NODC 181080- 181083, 181085 181087-181091 181093, 181094 181097-181107 181109-181111	

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WDC-A, OCEANOGRAPHY DATA INFORMATION

COUNTRY/ CATALOGUE NUMBER	COUNTRY/ SHIP OR FIXED STATION	START DATE	END DATE	IHB REG.	OCEANOGRAPHIC TYPES				OBSERVATIONS				DATA CENTER REFERENCE NUMBER	REMARKS
					NO OF STAS.	PHYS. & CHEM DATA	SERIAL SAMPLE DEPTHS	MAX. DEPTH	BATHY- THERMO- GRAPH	CURRENTS	BIO- LOGICAL	METEORO- LOGICAL	SEA SURFACE	
106.19 F-06	ENDEAVOUR	09/02/71	19/05/71	57b 59	10 * (28)		1990 *	1999					NODC 181084, 181086, 181092	Cruises 71/5, 71/7, 71/16 * Data recatalogued from 106.19 A-7 (Change 17)
106.22 A-06	ENDEAVOUR, PARIZEAU	03/05/83	08/12/85	57b 59	954 †	T, S, sig-t, SVA, AD, Vs, PE, Oxy	50-1200	1447					Publication 06.17-159 thru 06.17-165	Cruises 83-10, 11 & 12, 84-10, 11 & 14, 85-10 & 14, NODC 924 CTD stations
106.22 A-07	ENDEAVOUR	14/01/86	26/03/86	57b 59	75 †	(T, S, sig-t, SVA, AD, Vs, Oxy) ∅	50-1000	2000					NODC 188658-188660	Cruises 86-90 and 86-91
106.22 N-02	ENDEAVOUR	12/02/85	15/02/85	57b	13 †	(T, S, sig-t, SVA, AD, Vs) ∅	800-1250	1962					NODC 188634	Cruise 85-01
106.22 N-03	ENDEAVOUR	11/06/86	21/06/86	57b	54 †	(T, S, sig-t, SVA, AD, Vs) ∅	2000-2500	2651					NODC 188653	
106.22 U-01	JOHN P. TULLY	30/03/87	20/07/87	13		PO4, NO3, S103 *					Pigm-26 *		Publication 06.17-158 *	Cruise NOGAP B.6 (Change 43)
106.22 U-02	JOHN P. TULLY	01/08/87	08/09/87	13	103 † (132)								Publication 06.17-166 *	Cruise NOGAP B.6 103 CTD stations (Change 43)
106.22 W-01	Ship not identified	25/10/87	07/11/87	57b	40 †	T, S, sig-t, SVA, AD, Vs	300	1194					NODC 188663	
109.....	DENMARK.....													
109.02 F-11	Ship not identified	01/07/58	15/08/58	23a 23b 15	92	(T, S, sig-t, SVA, AD, Vs) ∅	40-3400	3580					NODC 261293	
109.02 J-01	ERIKA-DAN	25/01/62	20/04/62	15 15A 23a 23b	213	(T, S, sig-t, AD, Vs, Oxy) ∅	150-3900	4243				(Wd, W) ∅	NODC 310170	
114.....	GERMANY (Federal Republic).....												DOD 86003 NODC 062135	Cruise 73
114.01 J-28	METEOR	14/11/85	16/11/85	4	23	(T, S) ∅	25-30	39				(Wd, Ta, Tw) ∅	DOD 86041, 87064, 87071 NODC (BT) 075117, 075122 075123, 075127 075128	Cruises 18, 36 and 37, IGOS Period: 15/12/85-21/1/86, 1/10/86-5/1/87
114.01 M-45	Ship not identified	15/12/85	05/01/87	23a 32b										

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WDC-A. OCEANOGRAPHY DATA INFORMATION

				TYPES OF			OBSERVATIONS								
COUNTRY/ CATALOGUE NUMBER	COUNTRY/ SHIP OR FIXED STATION	START DATE	END DATE	IHB REG.	OCEANOGRAPHIC		SERIAL STATIONS		BATHY- THERMO- GRAPH	CURRENTS	BIO- LOGICAL	METEORO- LOGICAL	SEA SURFACE	DATA CENTER REFERENCE NUMBER	REMARKS
					NO. OF STAS.	PHYS. & CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH							
114.01 M-46	Ship not identified	21/01/87	21/11/87	23a 32b					XTB-216 Ø			(Wd, Ta, Tw) Ø		DOD 87084, 87127, 87128, 87146, 87169, 88121 NODC (8T) 075124, 075125 075129-075138	Cruises 38 thru 43, ICOSS
114.01 M-47	Ship not identified	03/12/87	15/04/88	23a 32b					XTB-82 Ø			(Wd, Ta, Tw) Ø		DOD 88122, 88133, 88134 NODC (8T) 075139-075144	Cruises 44 thru 46, ICOSS
114.01 S-02	FRITHJOF	31/10/86	26/11/86	6					XTB-24 Ø			Wd Ø		DOD 87056 NODC (8T) 075125, 075126	Cruise 100, ICOSS
114.02 C-09	ANTON DOHRN	01/11/75	15/11/75	23b					MTB-118 Ø *					DOD 75051 NODC (8T) 039144 *	Cruise 187/1, ICNAF (Change 21)
114.02 C-18	ANTON DOHRN	31/03/86	06/05/86	22 23a	125	(T, S) Ø	90-200	243				(Wd, W, Ta, Cld) Ø	Wa Ø	DOD 86171 NODC 062125	Cruise 266
114.05 A-17	WALTHER HERWIG	24/01/88	07/06/88	4	79	(T, S, Oxy, Alk) Ø	20-100	278						DOD 88036, 88155 NODC 062131, 062133	Cruises 132 and 135 Period: 24/1-16/2/88 and 27/5-7/6/88
114.05 C-02	ANTON DOHRN	02/08/77	11/09/77	4 6 5									(T, S, sig-t, Vs)-204 Ø *	DOD 78054 *	Cruises 200 and 201 (Change 23)
114.06 C-12	VICTOR HENSEN	08/06/76	14/06/76	4	4	(T, S) Ø	90-135	135					(T, S) -20 Ø	DOD 84022 NODC 062136	Cruise 45, FLEX
114.06 C-13	VICTOR HENSEN	27/07/77	31/07/77	4	4	(T, S) Ø	100	100					(T, S) -17 Ø	DOD 84025 NODC 062137	Cruise 44
114.07 A-28	ANTON DOHRN	29/03/84	01/09/84		84 * (263)									NODC 062121, 062122 *	Cruises 251, 253 and 254/1 (Change 41)
114.07 B-12	WALTHER HERWIG	24/04/79	15/05/79	15 15A 23a 23b	14 * (14)	T *	280-620 *	667						DOD 79054 NODC 062128 *	Cruise 78 (Change 37)
114.07 B-13	WALTHER HERWIG	12/02/81	22/03/81	32b SO					XTB-44* (XTB- 48)					DOD 81076 NODC (8T) 075119 *	Cruise 89/2, A, FIBEX (Change 37)
114.07 B-15	WALTHER HERWIG	13/11/87	17/11/87	23a 23b					XTB-40 Ø			(Wd, W, Ta, Cld) Ø		DOD 87168 NODC (8T) 075120	Cruise 130/B
114.07 B-16	WALTHER HERWIG	19/01/88	26/02/88	4 23a	95	(T, S) Ø	37-190	201	MTB-81 Ø			(Wd, W, Ta, Tw Cld) Ø	Wa Ø	DOD 88024, 88087 NODC 062132	Cruises 133/A and B, IYAS

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WDC-A. OCEANOGRAPHY DATA INFORMATION

COUNTRY/ CATALOGUE NUMBER	COUNTRY/ SHIP OR FIXED STATION	START DATE	END DATE	IHB REG.	TYPES OF OBSERVATIONS				BIO- LOGICAL	METEORO- LOGICAL	SEA SURFACE	DATA CENTER REFERENCE NUMBER	REMARKS
					NO. OF STAS.	PHYS. & CHEM DATA	SERIAL SAMPLE DEPTHS	MAX. DEPTH	BATHY- THERMO- GRAPH	CURRENTS			
114.07 B-17	WALTHER HERWIG	18/11/75	31/12/75	32b SO	80	(T, S, SVA, sig-t, SVA, AD, Vs) Ø	100-2100	2169				NODC 060284	Cruise 59
114.11 A-14	ANTON DOHRN	14/05/85	04/09/85	4 23a	43	(T, S, SVA, sig-t, Vs) Ø	25-130	166			(Wd, W, Ta, Cld) Ø	DOD 85110, 86034 NODC 062123, 062124	Cruises 259/C, 261/A
114.11 A-15	ANTON DOHRN	21/05/86	03/06/86	4							(T, S) -68 Ø ††	DOD 86172 NODC 062127	Cruise 267
114.11 B-20	SOLEA	10/11/82	22/11/82	1	12	(T, S, Oxy) Ø	30-90	126				DOD 82085 NODC 062138	Cruise 146
114.11 B-21	SOLEA	25/07/83	29/07/83	4							(T, S) -54 Ø ††	DOD 84063 NODC 062139	Cruise 157
114.11 B-22	SOLEA	21/05/86	16/11/86	4	30	(T, S, Oxy, Alk) Ø	16-50	55			(Wd Ø (T, S)-1 Ø	DOD 86183, 86197 NODC 062140, 062141	Cruises 212, 216 Period: 21-26/5/86 and 8-16/9/86
114.11 B-23	SOLEA	27/01/87	30/11/87	4 1	92	(T, S, Oxy, Alk) Ø	23-30	100				DOD 87032, 87058, 87123, 87170 NODC 062142-062143	Cruises 224, 227, 234, 239 Period: 27/1-26/3/87, 11-24/8/87 and 27-30/11/87
114.11 B-24	SOLEA	23/01/88	28/01/88	1	3	(T, S, Oxy) Ø	26-37	37				DOD 88018 NODC 062146	Cruise 242
114.11 C-03	WALTHER HERWIG	02/06/87	20/12/87	4 1	133	(T, S, Oxy, Alk) Ø	12-90	90			(Wd Ø	DOD 88035, 88082 NODC 062129, 062130	Cruises 128, 131 Period: 2-15/6/87 and 8-20/12/87
116.01 E-03	GHANA..... KAKADIAMAA	25/03/81	03/12/81	34	115	(T, S, SVA, sig-t, SVA, AD, Vs, Oxy) Ø	15-100	100			(Wd, Ta, Tw, Cld, Bar) Ø	NODC GH0992	Cruises 1 thru 36
116.01 E-04	KAKADIAMAA	13/01/82	21/12/82	34	135	(T, S, SVA, sig-t, SVA, AD, Vs, Oxy) Ø	20-100	100			(Wd, Ta, Tw, Cld, Bar) Ø	NODC GH0991	Cruises 1 thru 29
116.01 E-05	KAKADIAMAA	05/01/83	20/12/83	34	117	(T, S, SVA, sig-t, SVA, AD, Vs, Oxy) Ø	20-100	100			(Wd, Ta, Tw, Cld, Bar) Ø	NODC GH0995	Cruises 1 thru 33
116.01 E-06	KAKADIAMAA	18/01/84	21/12/84	34	107	(T, S, SVA, sig-t, SVA, AD, Vs, Oxy) Ø	25-100	100			(Wd, Ta, Tw, Cld, Bar) Ø	NODC GH0996	Cruises 1 thru 30

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				TYPES OF OBSERVATIONS													
COUNTRY/ CATALOGUE NUMBER	COUNTRY/ SHIP OR FIXED STATION	START DATE	END DATE	IHB REG. NO.	OCEANOGRAPHIC		SERIAL STATIONS		BATHY- THERMO- GRAPH		CURRENTS	BIO- LOGICAL	METEORO- LOGICAL	SEA SURFACE	DATA CENTER REFERENCE NUMBER	REMARKS	
					NO. OF STATS.	PHYS. & CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH	NO. OF STATS.	PHYS. & CHEM. DATA							
116.01 E-07	KAKADU AREA	03/01/85	18/11/85	34	87	(T, S, sig-t, SVA, AD, Vs, Oxy) Ø	30-100	100					(Wd, Ta, Tw, Cld, Bar) Ø	(Wa, Col, Tra) Ø	NODC GH0997	Cruises 1 thru 22	
124.....	JAPAN.....																
124.01 B-83	RYOFU MARU	15/01/87	02/11/87	50 51 56 57a 61a 66	213	T, S, TherAnom, AD, PO4, Ptotal, NO2, NO3, pH, Heavy Metal, Hydrocarbon	30-4500	4980	MTB-367	Surf-GEK -125 Subs-5			Wd, W, Ta, Tw, Cld, Bar, Vis	S Wa, Col, Tra	NODC 493845, 493846 Publication 24.07-076	Cruise KER, IGOSS, WESTPAC, MARPOLMON	
124.01 B-84	RYOFU MARU	15/09/87	20/09/87	56 57a		(T, S, sig-t, SVA, AD, Vs, Oxy) Ø			MTB-11	Surf-GEK -8				S	Publication 24.07-076	Cruise IGOSS	
124.01 F-27	KEIFU MARU	15/01/87	05/03/87	52 56 57a					MTB-36					S	Publication 24.07-076		
124.01 F-28	KEIFU MARU	20/04/87	25/11/87	50 57a					MTB-117					S	Publication 24.07-076	Cruise IGOSS	
124.02 B-59	OSHORO MARU	29/11/87	06/09/88	45b 52 55 57a 57b	188 †	T, S, sig-t, SVA, TherAnom, AD, Oxy, PO4, NO2, NO3, Si	60-1500	2000		Phyt-155 Eggs-24 FObs-56 Pigm-8			Wd, W, Ta, Tw, Bar	T Wa, Col, Tra	Publication 24.04-042	Cruises 21 thru 24	
124.02 C-12	HOKUSEI MARU	10/01/88	25/10/88	52 56 57a	149 †	T, S, sig-t, SVA, AD, TherAnom, AD	20-1000	1750	XTB-46				Wd, W, Ta, Tw, Bar	S Wa, Col, Tra	Publication 24.04-042	Cruises 37 thru 40 100 CTD stations	
124.05 B-25	AMAGI MARU, ASAMA MARU, CHIBA MARU NO. 2, FUSAMI MARU, FUSAMI MARU NO. 2, KAIKO MARU, MIYAKO, SHIOKAZE, SOYO MARU, SURUGA MARU, USHIO	07/01/85	23/12/85	50 56 57a	1,965 †	T, S, TherAnom, AD, Oxy, PO4, NO2, NO3, pH) Heavy Metal Hydrocarbon	10-1000	1500	DTB-364	Surf-GEK -432			Wd, W, Ta, Cld, Bar	T, S Wa, Col, Tra	Publication 24.06-062	1,323 CTD/STD stations	
124.08 D-75	KOFU MARU	05/02/87	29/10/87	52 54 57a	138	(T, S, TherAnom, AD, Oxy, PO4, NO2, NO3, pH) Heavy Metal Hydrocarbon	30-1300	1424	MTB-479	Surf-GEK -390 Pigm-79			(Wd, W, Ta, Tw, Cld, Bar, Vis) Ø	S Wa, Col, Tra	NODC 493847-493853 Publication 24.07-076	Cruise KER, IGOSS, WESTPAC	
124.09 A-90	SHUMEU MARU	04/02/87	22/11/87	50 56	26	(T, S, TherAnom, AD, Oxy, Ptotal, NO2, NO3, pH) Ø Heavy Metal Hydrocarbon	10-1550	1554	MTB-156	Surf-GEK -68			Wd, W, Ta, Tw, Cld, Bar, Vis	S Wa	NODC 493854 Publication 24.07-076		

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WDC-A. OCEANOGRAPHY DATA INFORMATION

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					NO OF STAS.	PHYS. & CHEM DATA	SERIAL SAMPLE DEPTHS	MAX DEPTH	BATHY- THERMO- GRAPH	CURRENTS	BIO- LOGICAL	METEORO- LOGICAL	SEA SURFACE		
124.09 A-91	SHUNPU MARU	26/04/87	21/10/87	56	99	(T, S, TherAnom, AD, Oxy, PO4, Ptotal, NO2, NO3, pH) 0 Heavy Metal Hydrocarbon	10-3600	3768	MTb-293	Surf-GEK -261	Phyt-29 Zoo-30 Pigm-74	(Wd, W, Ta, Tw, Cld, Bar, Vis) 0	S Wa, Col, Tra	NODC 493855-493857 Publication 24.07-076	Cruise KER, IGOSS, WESTPAC, MARPOLMON
124.10 D-78	CHOFU MARU	10/03/87	17/03/87	50	12	T, S, TherAnom, AD, Oxy	80-500	900	MTb-20	Surf-GEK -20	Phyt-9 Zoo-9	Wd, W, Ta, Tw, Cld, Bar	Wa	Publication 24.07-076	
124.10 D-79	CHOFU MARU	15/04/87	17/10/87	50 52 56	291	(T, S, TherAnom, AD, Oxy, PO4, Ptotal, NO2, NO3, pH) 0 Heavy Metal Hydrocarbon	20-3000	3000	MTb-101	Surf-GEK -45	Phyt-26 Zoo-27 Pigm-88	(Wd, W, Ta, Tw, Cld, Bar, Vis) 0	Wa, Col, Tra	NODC 493859-493861 Publication 24.07-076	Cruise KER, IGOSS, WESTPAC, MARPOLMON
124.11 D-65	SEIFU MARU	05/02/82	22/11/82	52	20	(T, S, TherAnom, AD, Oxy, PO4, Ptotal, NO2, NO3, pH) 0 Heavy Metal Hydrocarbon	200-1200	1200	MTb-76	Surf-GEK -65	Phyt-9 Zoo-9 Pigm-20	(Wd, W, Ta, Tw, Cld, Bar, Vis) 0	S Wa, Col, Tra	NODC 493862 Publication 24.07-076	Period: 5-22/2/82 and 7-22/11/82
124.11 D-66	SEIFU MARU	08/05/87	28/10/87	52	135	(T, S, TherAnom, AD, Oxy, PO4, Ptotal, NO2, NO3, pH) 0 Heavy Metal Hydrocarbon	10-2150	2382	MTb-274	Surf-GEK -257 Subs-5	Phyt-27 Zoo-23 Pigm-108	(Wd, W, Ta, Tw, Cld, Bar, Vis) 0	(T, S, TherAnom, AD, Oxy, PO4, Ptotal, NO2, NO3, pH)-5 S Wa, Col, Tra	NODC 493863-493865 Publication 24.07-076	Cruise KER, IGOSS, WESTPAC, MARPOLMON
124.16 A-30	KOYO MARU	18/05/88	08/01/89	45b 50 57a 57b	100 †	T, S	75-1000	1000				Wd, W, Ta, Bar	T Wa, Col, Tra	Publication 24.11-046	9 CTD stations
124.19 8-25	KUROSHIO MARU, GENKAI MARU, HINOKUNI MARU, KAGAMI, SATSUNAN, TSURU MARU, YOKO	07/01/85	05/12/85	50 52	1,012	T, S	25-800	1000	MTb-65			Wd, W, Ta, Cld, Bar	(T, S) -23 Wa, Col, Tra	Publication 24.06-062	
124.20 A-25	HOKKO MARU, HOKUSHIN MARU, HOKUYO MARU, KINSEI MARU, MATSUDA MARU NO. 2, OYASHIO MARU, TANKAI MARU, TANSHU MARU	20/01/85	13/12/85	52 57a	2,716 †	T, S	30-900	991				Wd, W, Ta, Bar	(T, S)-5 Col, Tra	Publication 24.06-062	1,089 CTD stations

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COUNTRY/ CATALOGUE NUMBER	COUNTRY/ SHIP OR FIXED STATION	START DATE	END DATE	IHB REG.	OCEANOGRAPHIC		SERIAL STATIONS		BATHY- THERMO- GRAPH	CURRENTS	BIO- LOGICAL	METEORO- LOGICAL	SEA SURFACE	DATA CENTER REFERENCE NUMBER	REMARKS
					NO. OF STAS.	PHYS. & CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH							
124.21 A-27	AZUMA, HOKKO MARU, HOKYO MARU, HOYO MARU NO. 12, IRAKI MARU, IWATE MARU, KAIUN MARU, NATSUDO MARU, SHIN DAITO MARU, SHOYO MARU, SHUNYO MARU, TOKIWA, TOO MARU, WAKATAKA MARU	07/01/85	17/12/85	52 57a	1,657 †	T, S	10-500	1200	X/TD-338 D/TD-744	Surf-CEK -303		Wd, W, Ta, Cld, Bar	S Wa, Col, Tra	Publication 24.06-062	329 CTD/STD stations
124.22 A-25	FUKUI MARU, HAKUSAN MARU, HEIAN MARU, KAIYO MARU, KOSHICHI MARU, MIZUHO MARU, MIZUNAGI, MOGAMI MARU, OTORI MARU, SEIHO MARU, SENSU MARU, SHIMANE MARU, SHINTAJIMA MARU, TATEYAMA MARU, TOO MARU, TOTTORI MARU NO. 1	28/01/85	04/12/85	52	1,614 †	T, S	30-300	424	MTD-16 D/TD-385			Wd, W, Ta, Cld, Bar	T, S Wa, Col, Tra	Publication 24.06-062	601 CTD stations
124.23 A-28	YOSHU MARU, AKI, BUZEN, HAYASUI MARU, HAYATE, HYOGO MARU, ISOKAZE, KAIYO MARU, KUROSHIO, MIDORI, SHIRAFUJI MARU, TACHIBANA MARU, TAKUYO, TOKUSHIMA MARU, TONAN MARU, TOSA, WAKAYAMA, YAKURI, YOKO MARU	07/01/85	26/12/85	50 53 56	5,612 †	T, S	10-1000	1500	MTD-42	Surf-CEK -558		Wd, W, Ta, Cld, Bar	(T, S) -348 Wa, Col, Tra	Publication 24.06-062	640 CTD stations
124.24 B-48	HAKUHO MARU	29/08/86	25/09/86	56	49 †	T, S, Oxy, sig-t, ΔD	900-1000	1000			Eggs-27			Publication 24.13-068	Cruise KH-86-4, EEL
124.24 B-49	HAKUHO MARU	25/01/87	07/03/87	56 57a	61 †	T, S, sig-t, Oxy, PO4, SiO2, pH, Alk	2200-6500	6500						Publication 24.13-069	Cruise KH-87-1, WESTPAC
124.27 A-20	ASHU MARU NO. 2, CHISHIO MARU, CHOKAI MARU, CHOSUI MARU, EHIME MARU, FUKUSHIMA MARU, FUNAKAWA MARU, GENYO MARU, HIYAGI MARU, HOKUHO MARU, KANO MARU, KOCHI, MIYAGI MARU, OITA MARU, OYAMA MARU, RIASU MARU NO. 1, etc.	11/01/85	31/12/85	45b 56 57a 57b					D/TD-910 X/TD-108			Ta	T, S	Publication 24.06-062	Ship (continued): RIASU MARU NO. 2, SATSUMASEIUN MARU NO. 2, SHINKAI MARU, SHINYO MARU, SHONAN MARU, TANISHU MARU, TOSAKATEN MARU, UNRYU MARU, WACHIBA MARU, WAKACHIBA MARU
124.31 B-03	SHIRASE	03/12/85	13/03/86	45a 45b 45c 45d SO							Pigm-601 *			Publication 24.22-024	Cruise JARE-27 (Change 42)

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WDC-A. OCEANOGRAPHY DATA INFORMATION

COUNTRY/ CATALOGUE NUMBER	COUNTRY/ SHIP OR FIXED STATION	START DATE	END DATE	IHB REG.	TYPES OF STATIONS			OBSERVATIONS					DATA CENTER REFERENCE NUMBER	REMARKS	
					NO. OF STAS.	PHYS. & CHEM DATA	SERIAL SAMPLE DEPTHS	MAX. DEPTH	BATHY- THERMO- GRAPH	CURRENTS	BIO- LOGICAL	METEORO- LOGICAL			SEA SURFACE
124.31 B-04	SHIRASE	14/11/86	31/03/87	45a 45b 45c 45d 46a 48m 48n 49 56 50	25 †	T, S, Oxy, sig-t, AD, PO4, NO2, NO3, NH4, SiO3, pH, Hydrocarbon Heavy Metal	190-3500	3954	MTB-150		Pigm-682	Wd, W, Ta, Cld, Bar, Vis	(T, S, Oxy, PO4, NO2, NO3, NH4, SiO3, pH)-195 Wa	Publication 24.22-023 24.22-025	Cruise JARE 28 12 CTD stations
137.....	U.S.S.R.....														
137.04 A-31	MIKHAIL LOMONOSOV	24/01/79	16/03/79	23a					MTB-125			Wd, Ta, Tw, Bar, Sol Rad	T Wa		Cruise 37, GARP/FGGE (Change 28)
137.06 L-34	PASSAT	09/02/85	08/05/85	23a 23b 28B	358	(T, S, SVA, sig-t, SVA, AD, Vs, Oxy, pH) Ø	500-2200	2413						NODC 907134	Region: OWS "C"
137.06 L-35	PASSAT	27/05/84	10/09/84	23a 23b 28A 28B 28Bh 30	345	(T, S, SVA, sig-t, SVA, AD, Vs) Ø	100-2200	2318						NODC 907154	
137.06 Y-01	BOGUSLAV	09/04/86	11/05/86	23b	135	(T, S, SVA, sig-t, SVA, AD, Vs) Ø	60-1000	1036						NODC 907172	
137.11 A-17	AKADEMIK KNIPOVICH	01/06/81	28/07/81	15A 23b	176	(T, S, SVA, sig-t, SVA, AD, Vs) Ø	70-600	650						NODC 907179	Cruise 4
137.11 F-10	FRIDTJOF NANSEN	30/08/87	03/12/87	15A 23b	192	(T, S, SVA, sig-t, SVA, AD, Vs) Ø	50-1000	1000						NODC 907182	Cruise 1
137.11 L-07	PERSEI III	02/12/81	27/01/82	15 15A 23b	102	(T, S, SVA, sig-t, SVA, AD, Vs) Ø	140-1000	1100						NODC 907186	Cruise 26
137.11 L-08	PERSEI III	10/03/87	04/07/87	15A 23b	504	(T, S, SVA, sig-t, SVA, AD, Vs) Ø	40-1400	2002						NODC 907187	Cruise 37
137.11 L-09	PERSEI III	01/03/88	23/06/88	15A 23b	443	(T, S, SVA, sig-t, SVA, AD, Vs) Ø	65-2000	2103						NODC 907192	
137.11 M-06	PROTSION	22/09/81	05/11/81	15A 23b	140	(T, S, SVA, sig-t, SVA, AD, Vs) Ø	50-2000	2000						NODC 907183	Cruise 24
137.11 N-06	POISK	29/03/84	31/05/84	23b	79	(T, S, SVA, sig-t, SVA, AD, Vs) Ø	60-1140	2000						NODC 907184	Cruise 49

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WDC-A, OCEANOGRAPHY DATA INFORMATION

					TYPES		OF		OBSERVATIONS							
COUNTRY/ CATALOGUE NUMBER	COUNTRY/ SHIP OR FIXED STATION	START DATE	END DATE	IBB REG.	OCEANOGRAPHIC		SERIAL	STATIONS		BATHY- THERMO- GRAPH	CURRENTS	BIO- LOGICAL	METEORO- LOGICAL	SEA SURFACE	DATA CENTER REFERENCE NUMBER	REMARKS
					NO. OF STAS.	PHYS. & CHEM. DATA		SAMPLE DEPTHS	MAX. DEPTH							
137.11 N-07	POISK	22/10/85	11/12/85	15A 23b	82	(T, S, SVA, AD, Vs) 0	50-600	2000							NODC 907185	Cruise 54
137.11 R-04	SULOY	16/10/83	29/01/84	15 15A 23b	127	(T, S, SVA, sig-t, SVA, AD, Vs) 0	150-1400	2000							NODC 907176	Cruise 29
137.11 R-05	SULOY	14/09/84	13/11/84	15A 23b	44	(T, S, SVA, sig-t, SVA, AD, Vs) 0	195-965	995							NODC 907178	Cruise 31
137.15 K-01	ADZHARIA	08/01/79	07/06/79	23a					MTB-246				Ta, Tw, T Wd, Bar		NODC 907181	Cruise 3, GARP, FGGE
137.21 B-04	NIKOLAI KONONOV	29/09/85	28/01/86	15 15A 23b	197	(T, S, SVA, sig-t, SVA, AD, Vs) 0	130-1200	1270							NODC 907180	
137.21 H-01	KAPITAN SHAYTANOV	13/09/87	07/12/87	15 15A 23b	222	(T, S, SVA, sig-t, SVA, AD, Vs) 0	40-1460	1540							NODC 907191	Cruise 12
137.21 H-02	KAPITAN SHAYTANOV	03/09/88	09/12/88	15 15A 23b	188	(T, S, SVA, sig-t, SVA, AD, Vs) 0	50-2000	2000							NODC 907169	
137.21 I-01	KLIMTSY	13/10/86	18/11/86	15 15A 23b	33	(T, S, SVA, sig-t, SVA, AD, Vs) 0	200-1000	1280							NODC 907170	
137.21 J-01	VITEBSK	31/08/86	27/11/86	23b	170	(T, S, SVA, sig-t, SVA, AD, Vs) 0	60-2000	2000							NODC 907189	Cruise 2
137.21 K-01	VILNYUS	20/06/84	23/08/84	23b	138	(T, S, SVA, sig-t, SVA, AD, Vs) 0	55-2000	2000							NODC 907173	Cruise 2
137.21 L-01	GENICHESK	31/03/85	30/06/85	15A 23b	321	(T, S, SVA, sig-t, SVA, AD, Vs) 0	50-800	995							NODC (BT) 075257-075271 075274-075283	
138.....	UNITED KINGDOM.....								XTB-926 0						NODC (BT) 075272-075273	Cruise 164 (Change 42)
138.01 R-03	CITROLANA	28/06/85	17/07/88	4 23a					XTB-30 .						NODC 741529 Publication 39.05-044	Cruise MASAI I
138.05 B-23	DISCOVERY	20/12/86	20/01/87	45a 45c SO											NODC 741530 Publication 39.05-044	Cruise MASAI II
138.10 B-03	CHARLES DARWIN	20/12/86	17/01/87	39 40 45a	116 †	(T, S, SVA, sig-t, SVA, AD, Vs, Oxy, N2) 0	200-4700	5232								
138.10 B-04	CHARLES DARWIN	18/07/87	13/08/87	39 45a	120 †	(T, S, SVA, sig-t, SVA, AD, Vs, Oxy, N2) 0	100-5180	5180								

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WDC-A. OCEANOGRAPHY DATA INFORMATION

COUNTRY/ CATALOGUE NUMBER	COUNTRY/ SHIP OR FIXED STATION	START DATE	END DATE	IHB REG.	TYPES OF OBSERVATIONS					BIO- LOGICAL	METEORO- LOGICAL	SEA SURFACE	DATA CENTER REFERENCE NUMBER	REMARKS
					NO. OF STAS.	PHYS. & CHEM DATA	SERIAL SAMPLE DEPTHS	MAX. DEPTH	BATHY- THERMO- GRAPH	CURRENTS				
139.01 A-15	UNITED STATES..... ATLANTIS	09/04/60	10/06/60	23b	102	(T, S, sig-t, AD, Vs) 0	1600-5100	5235					NODC 313268	ISOS Program
139.01 C-44	ATLANTIS II	19/01/80	15/02/80	32b 50	46	(T, S, sig-t, SVR, AD, Vs, Oxy) 0	800, 2500-3800	4738					NODC 313455	
139.01 D-44	CHAIN	11/04/72	06/06/72	23b	78	(T, S, sig-t, AD, Vs) 0	3300-5400	5418			(Wd, W) 0	Wa 0	NODC 312741	Cruise 104 REGION: OWS "E"
139.01 D-45	CHAIN	28/03/67	09/04/67	23b	40	(T, S, sig-t, AD, Vs, Oxy, PO4, Ptotal, NO2, NO3, SiO3) 0	60-200	225					NODC 311152	Cruise 65
139.01 D-46	CHAIN	08/04/60	13/10/60	23a 23b	97	(T, S, sig-t, AD, Vs, Oxy) 0	400-5500	5541					NODC 310716, 313270	Period: 8/4-7/5/60 and 5-13/10/60
139.01 I-24	KNORR	27/10/74	23/11/74	23b	79	(T, S, sig-t, AD, Vs, Oxy) 0	900-4990	5014					NODC 312708	
139.01 I-25	KNORR	09/03/75	15/04/75	23b	85	(T, S, sig-t, AD, Vs, Oxy, SiO3) 0	900-4990	4994					NODC 312709	
139.01 I-26	KNORR	04/01/83	02/02/83	23a	38	(T, S, sig-t, SVR, AD, Vs) 0	2100-5400	5468					NODC 319852	Cruise Tropical Atlantic Transient Tracers
139.01 J-01	PANULIRUS II													Catalogue number deleted from the files. Recatalogued as 239.13 C-2 (Change 12)
139.01 J-02	PANULIRUS II													Catalogue number deleted from the files. Recatalogued as 239.13 C-2 (Change 12)
139.01 J-03	PANULIRUS II													Catalogue number deleted from the files. Recatalogued as 239.13 C-2 (Change 12)

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WDC-A, OCEANOGRAPHY DATA INFORMATION

				TYPES OF				OBSERVATIONS							
COUNTRY/ CATALOGUE NUMBER	COUNTRY/ SHIP OR FIXED STATION	START DATE	END DATE	IHB REG.	OCEANOGRAPHIC		SERIAL STATIONS		BATHY- THERMO- GRAPH	CURRENTS	BIO- LOGICAL	METEORO- LOGICAL	SEA SURFACE	DATACENTER REFERENCE NUMBER	REMARKS
					NO.OF STAS.	PHYS. & CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH							
139.01 J-04	PANULIRUS II														Catalogue number deleted from the files. Recatalogued as 239.13 C-2 (Change 12)
139.03 A-03	ATKA	16/08/66	10/10/66	5 6 23a 23b	100	(T, S, AD, sig-t, Vs, Oxy) 0	70-300	2374				(Wd, W, Ta, Tw, Cld, Bar) 0	Wa 0	NODC 310861	
139.03 B-15	EDISTO	28/07/63	26/08/63	5 6	103	(T, S, AD, sig-t, Vs, Oxy, PO4, NO3, SIO3, pH) 0	80-330	3465				(Wd, W, Ta, Tw, Cld, Bar) 0	Wa 0	NODC 310167	
139.03 G-06	SAN PABLO	21/07/60	21/08/60	6 23a 23b	70	(T, S, AD, sig-t, Vs, Oxy) 0	200-2600	2930				(Wd, W, Ta, Tw, Cld, Bar) 0	Wa 0	NODC 310666	
139.03 G-07	SAN PABLO	20/06/61	21/07/61	23b	32	(T, S, AD, sig-t, Vs) 0	80-5000	5328				(Wd, Ta, Tw, Cld) 0	Wa 0	NODC 310159	Region: OWS "J"
139.03 H-06	GILLISS	02/07/65	28/07/65	23a	77	(T, S, AD, sig-t, Vs) 0	400-600	2718						NODC 310498	
139.03 T-03	WESTWIND	13/09/58	03/10/58	14A 15 15A 23a 23b	30	(T, S, AD, sig-t, Vs) 0	20-150	150				(Wd, Ta, Tw, Cld) 0	Wa 0	NODC 310616	
139.03 HH-01	LIPAN	26/02/73	07/03/73	49 50 56	30	(T, S, AD, sig-t, Vs) 0	50-750	850				(Wd, Ta, Bar) 0	Wa 0	NODC 328480	
139.05 B-20	TRIDENT	11/07/66	15/07/66	23b	17	(T, S, AD, sig-t, Vs) 0	30-180	455				(Wd, Ta, Tw) 0	Wa 0	NODC 312796	Cruise 34
139.05 C-03	ENDEAVOR	15/11/83	19/12/83	61b	121 †	(T, S, SVa, AD, Vs) 0	100-1000	2953						NODC 329581	Cruises EN111 and EN112
139.05 C-04	ENDEAVOR	06/04/84	16/05/84	61b	147 †	(T, S, SVa, AD, Vs) 0	100-1000	2947						NODC 329582	Cruise EN115
139.07 A-10	HIDALGO	24/10/59	04/11/59	26	20	(T, S, AD, sig-t, Vs) 0	700-2300	2482						NODC 311534	Cruise 59-H-12
139.08 V-09	NEW HORIZON	09/08/88	26/10/88	57b	169	T, S, SVa, AD, Oxy, PO4, NO2, NO3, SIO3	50-540	890			Zoo-143 Pigm-169 PrPr-29	Wd, W, Ta, Tw, Cld, Bar	Wa, Col, Tra	Publication 39.01-311	Cruises CalCOFI 8808 and 8810 Period: 9-23/8/88 and 11-26/10/88

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WDC-A. OCEANOGRAPHY DATA INFORMATION

TYPES					OBSERVATIONS					OBSERVATIONS				
COUNTRY/ CATALOGUE NUMBER	COUNTRY/ SHIP OR FIXED STATION	START DATE	END DATE	IHB REG.	OCEANOGRAPHIC NO OF STATS.	SERIAL STATIONS		BATHY- THERMO- GRAPH	CURRENT'S	BIO- LOGICAL	METEORO- LOGICAL	SEA SURFACE	DATA CENTER REFERENCE NUMBER	REMARKS
						PHYS. & CHEM. DATA	SAMPLE DEPTHS							
139.12 A-03	HYDROGRAPHER	05/05/57	06/10/57	23b	25	(T, S, sig-t, AD, Vs) 0	30-200	200			(Wd, Ta, Tw, Cld) 0	Wa 0	NODC 310516	
139.12 A-04	HYDROGRAPHER	22/04/58	08/10/58	23b	37	(T, S, sig-t, AD, Vs) 0	25-190	199			(Wd, Ta, Tw, Cld) 0	Wa 0	NODC 310543	
139.12 A-05	HYDROGRAPHER	25/04/59	16/10/59	23b	24	(T, S, sig-t, AD, Vs) 0	30-130	212			(Wd, Ta, Tw, Cld) 0	Wa 0	NODC 310319	
139.12 C-08	EXPLORER	25/04/61	18/10/61	23b	58	(T, S, sig-t, AD, Vs, Oxy) 0	30-2400	3922			(Wd, Ta, Tw, Cld) 0	Wa 0	NODC 310944	Region: OWS "H"
139.15 C-10	YAQUINA	18/05/72	30/10/72	57b	-103 * (585)									Data catalogued as 139.15 C-8
139.15 C-14	YAQUINA	28/06/73	24/08/73	57b	33 * (288) †								NODC 319806, 319807 *	Cruise Y7308B, IDOE/CUEA (Change 19)
139.15 E-13	WECOMA	02/02/83	21/03/83	61b	195 †	(T, S, sig-t, SVA, AD, Vs) 0	50-990	992					NODC 329580	Cruise WELOC 83 Legs 2 and 3
139.15 E-14	WECOMA	10/03/85	21/04/85	61b	153 †	(T, S, sig-t, SVA, AD, Vs) 0	100-992	992					NODC 329583, 329584	Cruise WELOC 85-3
139.23 A-25	RESEARCHER	27/11/76	11/12/76	23b	74	(T, S, sig-t, AD, Vs, Oxy) 0	30-300	652					NODC 312880	Cruise 76-01
139.23 A-26	RESEARCHER	19/11/84	11/12/84	57b 61a 61b	45 †	(T, S, sig-t, SVA, AD, Vs) 0	200, 1000 3000-4000	4331					NODC 319723	Cruise EP4-84-RS, EPOCS
139.23 A-27	RESEARCHER	24/09/85	12/10/85	57b 61b	32 †	(T, S, sig-t, SVA, AD, Vs) 0	990, 3000-4000	4136					NODC 319726	Cruise EP3-85-RS, EPOCS
139.23 D-30	ALBATROSS IV	09/05/84	02/06/84	23b	181	(T, S, sig-t, AD, Vs) 0	10-300	300					NODC 313099	Cruise 84-03
139.23 G-12	DOLPHIN	15/05/73	27/05/73	23b	44	(T, S, sig-t, AD, Vs, Oxy, PO4, NO2, NO3) 0	5-670	832			(Wd, W, Ta, Tw, Cld) 0		NODC 312228	Cruise 3
139.23 K-21	DISCOVERER	28/04/85	15/06/85	57b 61b	77 †	(T, S, sig-t, SVA, AD, Vs) 0	200-1000	4129					NODC 319724, 319725	Cruises EP1-85-DI, EP2-85-DI, EPOCS
139.23 K-22	DISCOVERER	28/02/82	17/03/82	57b 61b	54 †	(T, S, sig-t, SVA, AD, Vs) 0	990	991					NODC 319749	Cruise EP1-82-DI, EPOCS

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WDC-A, OCEANOGRAPHY DATA INFORMATION

				TYPES		OF		OBSERVATIONS								
COUNTRY/ CATALOGUE NUMBER	COUNTRY/ SHIP OR FIXED STATION	START DATE	END DATE	IHB REG.	OCEANOGRAPHIC		SERIAL	STATIONS		BATHY- THERMO- GRAPH	CURRENTS	BIO- LOGICAL	METEORO- LOGICAL	SEA SURFACE	DATA CENTER REFERENCE NUMBER	REMARKS
					NO. OF STAS.	PHYS. & CHEM. DATA		SAMPLE DEPTHS	MAX. DEPTH							
139.23 L-18	OCEANOGRAPHER	19/04/86	01/12/86	57b 61b	216 †	(T, S, SVA, sig-t, AD, Vs) Ø	200-990, 3000-4000	4136							NODC 319750, 319727, 319728	Cruises EP1-86-OC thru EP4-86-OC, EPOCS
139.23 P-16	DELAWARE II	10/01/86	11/12/86	23b	659	(T, S, SVA, sig-t, AD, Vs) Ø	10-300	308							NODC 313390- 313392, 313401	Cruises 86-01, -03, -07, -10, MARMAP I
139.23 P-17	DELAWARE II	07/01/87	07/06/87	23b	205	(T, S, SVA, sig-t, AD, Vs) Ø	10-300	300							NODC 313402, 313403	Cruises 87-01, 87-04, MARMAP I Period: 7/1-8/2/87 and 21/5-7/6/87
139.23 Y-18	DAVID STARR JORDAN	20/01/88	11/05/88	57b	144	T, S, SVA, AD, Oxy, PO4, NO2, NO3, SIO3	30-520	742			200-117 Pigm-144 PirPr-23	Wd, W, Ta, Td, Cld, Bar	Wa, Col, Tra	Publication 39.01-310	Cruises CalCOFI 8801 and 8805	
139.23 Y-19	DAVID STARR JORDAN	11/06/73	04/07/73	57b	131 †	(T, S, SVA, sig-t, AD, Vs) Ø	300-1000	1000							NODC 319633	
139.31 C-01	CREST	30/04/81	04/05/81	27	15	(T, S, SVA, AD, Oxy, NO2, NO3) Ø	90-475	492							NODC 313055	Cruise CHO-02
143.....	KOREA.....															
143.02 R-14	PUSAN 852	05/06/87	20/08/87	51 52	92	(T, S, SVA, sig-t, AD, Vs) Ø	30-150	160				(Wd, Ta, Bar) Ø			NODC 247002, 247003	Cruises 8706, 8708
143.02 T-04	BUSAN 852	06/02/87	14/12/87	50 51 52	202	T, S, SVA, TherAnom, AD, Oxy, PO4, NO2	30-160	160				Wd, W, Ta, Cld, Bar	Wa, Col, Tra	Publication 43.02-077		
143.02 U-04	GYUNGBUK 853	07/02/87	26/12/87	52	332	T, S, SVA, TherAnom, AD, Oxy	50-475	500				Wd, W, Ta, Cld, Bar	Wa, Col, Tra	Publication 43.02-077		
143.02 V-04	JEONBUK 868	07/02/87	10/12/87	51	144	T, S, SVA, TherAnom, AD, Oxy	25-100	101				Wd, W, Ta, Cld, Bar	Wa, Col, Tra	Publication 43.02-077		
143.02 X-02	GANGWON 867	21/02/87	09/12/87	52	125	T, S, SVA, TherAnom, AD, Vs	45-500	509				Wd, W, Ta, Cld, Bar	Wa, Col, Tra	Publication 43.02-077		
143.02 Y-02	INCHEON 866	20/02/87	15/12/87	51	168	T, S, SVA, TherAnom, AD, Oxy	20-75	75				Wd, W, Ta, Cld, Bar	Wa, Col, Tra	Publication 43.02-077		

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WDC-A. OCEANOGRAPHY DATA INFORMATION

COUNTRY/ CATALOGUE NUMBER	COUNTRY/ SHIP OR FIXED STATION	START DATE	END DATE	IHB FIG.	TYPES OF OBSERVATIONS					BATHY- THERMO- GRAPH	CURRENTS	BIO- LOGICAL	METEORO- LOGICAL	SEA SURFACE	DATA CENTER REFERENCE NUMBER	REMARKS
					OCEANOGRAPHIC NO. OF STAS.	PHYS. & CHEM DATA	SERIAL SAMPLE DEPTHS	MAX. DEPTH								
153.01 A-06	VENEZUELA..... GUATQUERI	18/01/66	19/01/66	27	15	(T, S, SVA, sig-t, AD, Vs, Oxy, PO4, NO3) Ø	15-50	50							NODC 930054	Cruise G6601
153.01 A-07	GUATQUERI	18/08/60	28/08/60	23b 27	57	(T, S, SVA, sig-t, AD, Vs, Oxy) Ø	10-800	950							NODC 930055	Cruise G6008
153.01 B-08	LA SALLE	28/01/84	10/11/84	27	9	(T, S, SVA, sig-t, AD, Vs, Oxy) Ø	10-50	200					(T, S, sig-t, SVA, AD, Vs, Oxy, NO2, NO3, SiO4) -358 Ø		NODC 930034, 930035	Cruises FALCON 3 & 4 Period: 28/1-12/2/84 and 31/10-10/11/84
153.01 B-09	LA SALLE	26/05/87	05/06/87	27									(T, S, sig-t, SVA, AD, Vs, Oxy) -164 Ø		NODC 930044	Cruise ECOVEN 60
153.01 B-10	LA SALLE	03/05/83	16/05/83	27									(T, S, sig-t, SVA, AD, Vs, Oxy, PO4, NO2, NO3, SiO4, PH) -125 Ø		NODC 930033	Cruise FALCON 2
153.01 B-11	LA SALLE	08/05/85	12/05/85	27									(T, S, sig-t, SVA, AD, Vs, Oxy, PO4, NO2, NO3) -83 Ø		NODC 930038	Cruise ECOVEN 20
153.01 B-12	LA SALLE	27/02/86	06/11/86	23b 27	46	(T, S, SVA, sig-t, AD, Vs) Ø	5-150	200					(T, S, sig-t, SVA, AD, Vs, Oxy, PO4, NO2, NO3) -273 Ø		NODC 930041, 930042, 930062	Cruises DHNLS, ECOVEN, 40 & 50 Period: 27/2-30/4/86 and 28/10-6/11/86
153.01 B-13	LA SALLE	25/01/67	29/11/67	27 27	135	(T, S, AD, sig-t, Vs, Oxy, PO4, NO2, NO3, SiO3, PH) Ø	10-1200	1245				(Wd, W, Ta, Tw, Tra) Ø Cld, Bar) Ø		NODC 930006		

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WDC-A, OCEANOGRAPHY DATA INFORMATION

COUNTRY/ CATALOGUE NUMBER	COUNTRY/ SHIP/PORT STATION	START DATE	END DATE	IHB REQ. 23b	TYPES OF OBSERVATIONS					BIO- LOGICAL	METEORO- LOGICAL	SEA SURFACE	DATACENTER REFERENCE NUMBER	REMARKS
					OCEANOGRAPHIC	SERIAL	STATIONS	BATHY- THERMO- GRAPH	CURRENTS					
153.01 B-14	LA SALLE	14/03/68	31/03/68	23b 27	NO OF STAS.	PHYS. & CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH					NODC 930087, 980088	Cruises LSO 33 & LSO 34
153.01 B-15	LA SALLE	07/04/76	14/04/76	27	40	(T, S, sig-t, SVA, AD, Vs, Oxy) Ø	10-1100	1140					NODC 930066	Cruise LS 059
153.03 A-01	BIOMAR I	15/01/63	18/12/63	23b 27	147	(T, S, sig-t, AD, Vs, Oxy, PO4, SiO3, pH) Ø	10-800	970		(Wd, W, Ta, Tw) Ø	(T, S, sig-t, AD, Vs, Oxy) -6 Ø (Wa, Tra) Ø		NODC 930001, 930002	Period: 15/1-15/6/63 and 23/10-18/12/63
153.03 A-02	BIOMAR I	10/01/64	28/07/64	23b 27	78	(T, S, sig-t, SVA, AD, Vs, Oxy, PO4, Ptotal, NO2, NO3, SiO4, pH) Ø	10-300	900			(T, S, sig-t, SVA, AD, Vs, Oxy, PO4, Ptotal, NO2, NO3, SiO4, pH) -2 Ø		NODC 930081, 930083, 980084 930108	Cruises B-17, 18, 20, 23
153.03 A-03	BIOMAR I	02/09/65	26/10/65	23b 27	35	(T, S, sig-t, SVA, AD, Vs, Oxy, PO4, Ptotal, NO2, NO3, SiO4, pH) Ø	10-800	800					NODC 930076, 980105, 930106	Cruises B-32, 33, 34
153.03 A-04	BIOMAR I	26/02/66	26/02/66	27	2	(T, S, sig-t, SVA, AD, Vs, Oxy, PO4, Ptotal, NO2, NO3, SiO4, pH) Ø	30, 1000	1000					NODC 930079	Cruise B-37
153.04 A-01	GOLFO DE CARIACO	09/03/69	11/12/69	27	381	(T, S, sig-t SVA, AD, Vs) Ø	10-30	30				(T, S, sig-t, SVA, AD, Vs) -32 Ø	NODC 930111-930116 930119, 930120 930122-930124	Cruises A21, B21, A22
153.04 A-02	GOLFO DE CARIACO	15/01/70	28/03/70	27	46	(T, S, sig-t, SVA, AD, Vs) Ø	10-30	30				(T, S, sig-t, SVA, AD, Vs) -77 Ø	NODC 930117, 930118, 930125	Cruises A21, B21, A22

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WDC-A. OCEANOGRAPHY DATA INFORMATION

COUNTRY/ CATALOGUE NUMBER	COUNTRY/ SHIP/PORT/EXED STATION	START DATE	END DATE	IHB REG.	TYPES OF STATIONS				OBSERVATIONS				DATA CENTER REFERENCE NUMBER	REMARKS
					NO OF STAS	PHYS. & CHEM. DATA	SERIAL SAMPLE DEPTHS	MAX DEPTH	BATHY- THERMO- GRAPH	CURRENTS	BIO- LOGICAL	METEORO- LOGICAL	SEA SURFACE	
160.02	C-01	19/07/67	22/03/70	27	120	T, S, sig-t, Oxy, PO4, NO2, NO3, SiO3, ph	5-800	800				Wd, Cld	(T, S, sig-t, Oxy, PO4, NO2, NO3, SiO3, ph)-83 Wa, Col, Tra	Cruises B-1, B-BY, B-2, B-3, B-4, B-5a, B-5b Period: 19-78/7/67, 27/5-17/7/68, 11-17/4/69, 5-14/8/69 and 20/1-22/3/70
173.02	B-01	18/11/86	16/12/86	56 57a 61b		PO4, NO2, NO3, Si, ph					Pigm-71	Wd, Ta, Tw, Cld, Bar, Vis Hum, Vis	T * Wa, Tra	US-PRC Cooperative Study, Cruise PRC-2 Legs 1 and 2, TOGA (Change 39)
173.02	C-01	09/01/86	18/02/86	56 57a 57b 61a		Oxy, NO2, NO3, PO4, SiO4 *					Pigm-68 PrPr-68 *	Wd, Bar	Tra *	US-PRC Cooperative Investigation, Cruise 1, Legs II and III, TOGA (Change 41)
206.04	A-07	12/09/61	21/01/62	57b	20 * (73)									Cruises P-61-4, P-61-5 Region: OWS "p" (Original Catalogue)
206.04	A-09	17/01/62	05/08/62	57b	7 * (59)									Cruises P-62-1, P-62-2 Region: OWS "p" (Change 15)
206.05	D-01	08/08/76	09/10/76	13	56	(T, S, sig-t, SVA, AD, Vs) Ø	15-30, 50	50						NODC 188325- 188326
206.05	D-02	25/07/77	16/10/77	13	144	(T, S, sig-t, SVA, AD, Vs) Ø	50-60	60						NODC 188327 188328
206.05	D-03	11/07/80	27/07/80	13	7	(T, S, sig-t, SVA, AD, Vs) Ø	15-20	20						NODC 188324
206.08	A-04	03/08/74	15/01/75	57b	13 * (82)									NODC 188547- 188549 *
206.08	A-06	09/05/75	10/01/76	57b	18 * (226)									NODC 181432-181435 188553-188557

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WDC-A, OCEANOGRAPHY DATA INFORMATION

TYPES					OBSERVATIONS												
COUNTRY/ CATALOGUE NUMBER	COUNTRY/ SHIP OR FIXED STATION	START DATE	END DATE	IHB REG.	OCEANOGRAPHIC		SERIAL STATIONS		OF		BATHY- THERMO- GRAPH	CURRENTS	BIO- LOGICAL	METEORO- LOGICAL	SEA SURFACE	DATACENTER REFERENCE NUMBER	REMARKS
					NO.OF STAS.	PHYS.& CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH									
206.08 A-18	VANCOUVER, QUADRA	11/01/69	12/01/70	57b	183 * (384) †											NODC 188496-188505 * Cruises P-69-1 thru P-69-9 Region: OWS "p" 180 STD stations (Original Catalogue)	
206.08 A-21	VANCOUVER, QUADRA	18/08/81	27/10/81	57b	134 †	(T, S, SVA, sig-t, AD, Vs) Ø	100-2000	4125								NODC 188606 188608 Region: OWS "p"	
206.08 B-06	Ship not identified	19/01/82	05/12/82	57b	472 †	(T, S, SVA, sig-t, AD, Vs) Ø	100-2000	4238								NODC 188611- 188616 Region: OWS "p"	
206.08 B-07	Ship not identified	16/03/83	13/10/83	57b	194 †	(T, S, SVA, sig-t, AD, Vs) Ø	100-1380	4211								NODC 188617- 188619 Region: OWS "p"	
206.08 B-08	Ship not identified	27/04/84	22/11/84	57b	172 †	(T, S, SVA, sig-t, AD, Vs) Ø	100-2400	4215								NODC 188624-188626 188633 Region: OWS "p"	
206.08 B-09	Ship not identified	30/04/85	14/11/85	57b	205 †	(T, S, SVA, sig-t, AD, Vs) Ø	30-1300	4241								NODC 188635-188637 188668 Region: OWS "p"	
206.08 B-10	Ship not identified, W. E. RICKER	15/04/86	29/10/86	57b	55 †	(T, S, SVA, sig-t, AD, Vs) Ø	100-2000	4205								NODC 188648-188650 188655 Region: OWS "p"	
206.08 B-11	Ship not identified, W. E. RICKER	30/03/87	23/07/87	57b	22 †	(T, S, SVA, sig-t, AD, Vs) Ø	112-1500	4197								NODC 188661, 188666-188667 Region: OWS "p"	
206.08 E-08	PARIZEAU	27/05/87	09/12/87	57b	188 †	(T, S, SVA, sig-t, AD, Vs, OXY, PT, PE) Ø	75-2000 3500-4300	4334							S	NODC 188662, 188664-188665 Publication 06.17-156 Cruises 87-2, 87-4, 87-8, Ocean Storms Period: 27-5-9/6/89 and 23/9-9/12/87 Region: OWS "p" 177 CTD stations	
206.08 E-09	PARIZEAU	11/01/84	24/01/84	57b	132 †	(T, S, SVA, sig-t, AD, Vs) Ø	20-1000	1004								NODC 188627 Region: OWS "p"	
206.08 E-10	PARIZEAU, ENDEAVOUR, OCEAN KING	05/04/83	12/06/87	57b	840 †	(T, S, SVA, sig-t, AD, Vs) Ø	30-2700	2769								NODC 188610, 188630-188631 188639-188657 Oxy-244 ††	
206.08 I-01	Ice Based Party	28/04/85	01/05/85	14	51 †	T, S, sig-t, Vs	77-78	78								Publication 06.17-157 Zoo-11 Cruise Ice Keel, '85 Experiment	
214.....	GERMANY (Federal Republic).....																
214.01	BORKUMRIFF (LV), Nordsee (Platform), ELBE 1 (LV), FERHARNBELT (LV), Kiel (LH)	01/01/57	31/12/87	1 4	901 * ††	T, S	5-25	25		Surface- 6,604 * ††				wd wa		Publication 14.02-196 * Period: 1/1/57-12/31/59 and 1/1/68-31/12/87 Total Stas: 7,945 Total Currents: 324,331 (Change 42)	

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WDC-A, OCEANOGRAPHY DATA INFORMATION

COUNTRY/ CATALOGUE NUMBER	COUNTRY/ SHIP OR FIXED STATION	START DATE	END DATE	IHB REG.	TYPES OF OBSERVATIONS					BIO- LOGICAL	METEORO- LOGICAL	SEA SURFACE	DATA CENTER REFERENCE NUMBER	REMARKS
					OCEANOGRAPHIC NO. OF STAS.	PHYS. & CHEM. DATA	SAMPLE DEPTHS	MAX DEPTH	BATHY- THERMO- GRAPH					
238.....	UNITED KINGDOM.....													
238.08 A-01	PANULIRUS													Catalogue number deleted from the files. Recatalogued as 239.13 A-3 (Change 12)
239.....	UNITED STATES.....													
239.02	Neah Bay	01/01/61	31/12/88	57b										
239.07	Mt. Desert Rock (LH), etc. ††	01/01/65	31/12/72	23b	††	T, S	14-50	55				T, S, sig-t	Publication 39.01-312 *	*Period: Add 1988 (Change 43)
239.07 K-25	ESCANABA	07/05/66	09/05/66	23b	11	(T, S, sig-t, AD, Vs, Oxy) 0	50-900	2235			(Wd, W, Ta, Tw, Cld, Bar) 0	Wa 0	NODC 310781	Publication 39.21-224 (Change 15)
239.07 U-15	YAKUTAT	01/11/66	03/11/66	23b	7	(T, S, sig-t, AD, Vs, Oxy) 0	15-780	783			(Wd, W, Ta, Tw, Cld, Bar) 0	Wa 0	NODC 310774	
239.13 A-01	PANULIRUS													Catalogue number deleted from the files. Recatalogued as 239.13 A-3 and 239.13 C-2. (Change 6)
239.13 A-02	Ship not identified													Catalogue number deleted from the files. Recatalogued as 239.13 C-2. (Change 25)
239.13 A-03	PANULIRUS	07/06/54	18/04/67	23b	280	T, S, Oxy	300-2610	2660					Publication 39.21-223	Region: OWS "S"
239.13 C-01	PANULIRUS II													Catalogue number deleted from the files. Recatalogued as 239.13 C-2. (Change 34)
239.13 C-02	PANULIRUS II	02/05/67	02/12/82	23b	235	T, S, Oxy	500-3848	3948					Publication 39.21-223	Region: OWS "S"
239.13 D-01	WEATHERBIRD	27/01/83	19/11/84	23b	48	T, S, Oxy	500-3848	3948					Publication 39.21-223	Region: OWS "S"

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WDC-A, OCEANOGRAPHY DATA INFORMATION

COUNTRY/ CATALOGUE NUMBER	COUNTRY/ SHIP OR FIXED STATION	START DATE	END DATE	IHB REG.	TYPES OF OBSERVATIONS					BIO- LOGICAL	METEORO- LOGICAL	SEA SURFACE	DATACENTER REFERENCE NUMBER	REMARKS
					OCEANOGRAPHIC	SERIAL	STATIONS	BATHY- THERMO- GRAPH	CURRENTS					
243.....	KOREA.....				NO. OF STAS.	PHYS. & CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH						
243.01 A-33	Ship not identified	06/02/87	27/12/87	50 51 52						Zoo-512			Publication 43.02-077	
243.01 C-17	BUSAN 852	06/02/87	08/12/87	50 51 52	72	T, S, sig-t, SVA, TherzAnom, AD, Oxy, PO4, NO2	75-125	125			Wd, W, Ta, Cld, Bar	Wa, Col, Tra	Publication 43.02-077	Cruise Korea-Japan Cooperative

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PART III
REMARKS

REMARKS

106.09 AA-14	SEA SURFACE: (T, S, sig-t, SVA, ΔD , V_s) - 1 (Single observation at 125m)														
106.10 H-05	SEA SURFACE: (T, S, sig-t, SVA, ΔD , V_s) - 2 (Single observations at various depths)														
106.11 C-28	SEA SURFACE: (T, S, sig-t, SVA, ΔD , V_s) - 163 (Single observations at various depths)														
106.11 C-32	SEA SURFACE: (T, S, sig-t, V_s) - 82 (Single observations at various depths)														
106.11 J-19	SEA SURFACE: (T, S, sig-t, ΔD , V_s) - 20 (Single observations at bottom)														
106.11 J-25	SEA SURFACE: (T, S, sig-t, V_s) - 134 (Single observations at surface or various depths)														
114.11 A-15	SEA SURFACE: (T, S) - 68 (Single observations at various depths)														
114.11 B-21	SEA SURFACE: (T, S) - 54 (Single observations at bottom)														
206.08 E-10	SEA SURFACE: O_2 - 244 (Observations at various depths)														
214.01	<p>NO. OF STAS.: New Total - 7,945</p> <p>CURRENTS: New Total - 324,331</p> <p>NOTE: WDC-A, Oceanography maintains detailed information concerning numbers of stations and numbers of current observations, archived by year, for each Light Vessel. This information is available upon request.</p>														
239.07	<p>SHIP OR FIXED STATION:</p> <table border="0" style="width: 100%;"> <tbody> <tr> <td>AMBROSE (LV)</td> <td>FIVE FATHOM BANK (LV)</td> </tr> <tr> <td>BARNEGAT (LV)</td> <td>FRYING PAN SHOALS (LV)</td> </tr> <tr> <td>BOSTON (LV)</td> <td>Mt. Desert Rock (LH)</td> </tr> <tr> <td>BUZZARDS BAY (LV)</td> <td>NANTUCKET SHOALS (LV)</td> </tr> <tr> <td>CHESAPEAKE (LV)</td> <td>PORTLAND (LV)</td> </tr> <tr> <td>DELAWARE (LV)</td> <td>WINTER QUARTER (LV)</td> </tr> <tr> <td>Diamond Shoal (LH)</td> <td>Woods Hole, Massachusetts</td> </tr> </tbody> </table> <p>NO. OF STAS.: Temperatures were recorded by bathythermograph. Salinities were determined by salinometer. Readings were taken once daily throughout the period indicated.</p>	AMBROSE (LV)	FIVE FATHOM BANK (LV)	BARNEGAT (LV)	FRYING PAN SHOALS (LV)	BOSTON (LV)	Mt. Desert Rock (LH)	BUZZARDS BAY (LV)	NANTUCKET SHOALS (LV)	CHESAPEAKE (LV)	PORTLAND (LV)	DELAWARE (LV)	WINTER QUARTER (LV)	Diamond Shoal (LH)	Woods Hole, Massachusetts
AMBROSE (LV)	FIVE FATHOM BANK (LV)														
BARNEGAT (LV)	FRYING PAN SHOALS (LV)														
BOSTON (LV)	Mt. Desert Rock (LH)														
BUZZARDS BAY (LV)	NANTUCKET SHOALS (LV)														
CHESAPEAKE (LV)	PORTLAND (LV)														
DELAWARE (LV)	WINTER QUARTER (LV)														
Diamond Shoal (LH)	Woods Hole, Massachusetts														

TRACK CHARTS

Track charts are available from WDC-A, Oceanography for cruises represented by the following Catalogue Numbers:

<u>WDC-A Catalogue Number</u>	<u>Page No.</u>
124.24 B-48	39
124.24 B-49	39
124.31 B-04	40
138.10 B-03	41
138.10 B-04	41
139.23 A-26	44
139.23 A-27	44
139.23 K-21	44
139.23 L-18	45
160.02 C-01	48

PART IV
DATA HOLDINGS OF
RNODC's AND
SPECIALIZED DATA CENTERS

DATA HOLDINGS OF RNODC's AND SPECIALIZED DATA CENTERS

This section of the Change Notice provides information on the availability of specialized data sets prepared by the various Responsible National Oceanographic Data Centers (RNODC's) and other Specialized Data Centers. Only those data sets that have actually been received by WDC-A, Oceanography are described in this section. WDC-A can provide magnetic tape copies of these data sets in the originator's format.

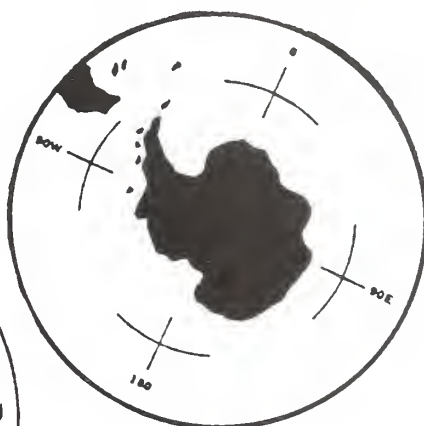
These data products are not described in the usual manner in the Catalogue portion of the Change Notice (except for certain separately-identified cruises that are also included in data sets such as FOY), as the data are not usually merged with the standard WDC-A, Oceanography data bases. Thus they constitute a suite of data products, prepared by RNODC's and other Specialized Data Centers, that are separate and distinct from the standard data types regularly catalogued in the Change Notices and normally available from WDC-A.

Such data products are not necessarily intended to be routinely exchanged by the WDC's under normal international data exchange guidelines. They may be voluminous or costly to prepare and, thus, may be precluded from regular data exchanges between WDC's and their exchange cooperators. Data sets in automated form are available from the WDC's usually at a cost not to exceed the cost of reproduction and postage.

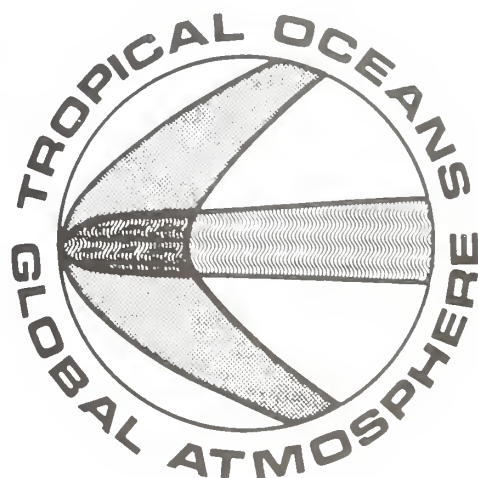
MEDALPEX



IGOSS



SOC



FGGE OPERATIONAL YEAR GLOBAL OCEAN CLIMATE DATA BASE

The National Oceanographic Data Center (NODC) is pleased to announce the availability of the Global Ocean Climate Data Base compiled as part of its efforts as the Responsible National Oceanographic Data Center for the FGGE* Operational Year (RNODC/FOY). The Global Ocean Climate Data Base is a collection of Oceanographic data submitted to NODC by 17 different countries. Although the formal FGGE Operational Year was from 1 December 1978 to 30 November 1979, the data set covers the extended FOY period from 1 September 1978 to 29 February 1980.

The data base includes four types of data: (1) oceanographic hydrocast (bottle) data, (2) conductivity/ salinity-temperature-depth (C/STD) data, (3) expendable bathythermograph (XBT)

data, and (4) Eulerian current (current meter) data. The data are recorded on magnetic tape in two different formats: (1) the Intergovernmental Oceanographic Commission General Exchange Format 3 (GF3) and (2) NODC archive formats (different format for each of the four types of data). In GF3 the data base comprises eight magnetic tapes; in the NODC formats the data base comprises four tapes.

The FGGE Operational Year was the culmination of a series of international ocean/atmosphere research programs conducted in the 1970's. This effort, in turn, was a steppingstone toward the increasingly ambitious and large-scale research and monitoring programs of the 1980's and 1990's that are directed toward fuller understanding of tropical dynamics and their influence on global ocean/atmosphere phenomena.

**FGGE = First GARP Global Experiment, also known as the Global Weather Experiment.
GARP = Global Atmosphere Research Program.*



The FGGE/FOY Data Base

The FGGE/FOY Global Ocean Climate Data Base compiled by the RNODC contains: 10,413 Oceanographic hydrocast (bottle) stations; 4,030 CTD/STD casts; 28,733 expendable bathythermograph (XBT)

temperature profiles; and 294 months of time-series data from current meter moorings. The sources of these data are summarized in Table 1.

Table 1. FGGE Operational Year Global Ocean Climate Data Base				
Country	Data Type			
	Oceanographic Stations (stations)	CTD/STD (stations)	XBT (stations)	Current Meter (meter-months)
Australia	--	--	2,754	--
Canada	324	--	507	--
People's Republic of China	318	--	--	--
Republic of the Congo	307	--	--	--
France	--	--	307	--
German Democratic Republic	74	--	--	--
Federal Republic of Germany	--	--	1,366	--
Ghana	335	--	--	--
Italy	--	--	55	--
Japan	1,138	--	832	--
Philippines	--	--	8	--
Poland	87	--	267	--
Republic of South Africa	--	--	56	--
Spain	--	--	180	--
UK	--	64	944	--
USA	1,271	3,966	20,727	294
USSR	6,559	--	730	--
TOTAL	10,413	4,030	28,733	294

Table 2 lists the number of tapes included in the data set. Customers may order the entire set of

tapes or only the tape(s) for one or more of the four different data types in either of the two format options.

Table 2. FOY Global Ocean Climate Data Tapes			
Data Type	Data Quantity	Number of Tapes	
		GF3 Format (1600 bpi)	NODC Format (6250 bpi)*
Oceanographic Station (hydrocast)	10,413 stations (128 cruises)	2	1
CTD/STD	4,030 stations (62 cruises)	1	1
XBT	28,733 stations (571 cruises)	3	1
Current Meter	294 months (27 meters)	2	1
TOTAL		8	4
<i>*Data tapes in NODC archive formats are also available by special request in 1600 bpi density</i>			

Data Availability

Magnetic tape copies of the FOY Global Ocean Climate Data Base are available from the RNODC in either GF3 format or in NODC archive formats. Magnetic tape characteristics are: (1) GF3 format -- 9 track, 1600bpi, ANSI/ASCII, non-labeled, record length = 1920, unblocked; (2) NODC formats -- 9 track, 6250 bpi, ANSI/ASCII, non-labeled, variable record length, maximum blocksize = 4,160 (oceanographic station and CTD/STD data), 2,600 (XBT data), and any multiple of 60 (current meter data).

Complete sets of tapes or individual tapes are available at the cost of tape reproduction from:

World Data Center A, Oceanography
NOAA
Washington, DC 20235
USA

Telephone: 202-606-4571 or FTS 266-4571
Electronic mail *NODC.WDCA* on
TELEMAIL/Omnet

RNODC MEDALPEX (Sea Level)

Mediterranean Alpine Experiment Sea Level Data Set

In 1975, the IOC decided to support the development of an oceanographic program in the Mediterranean during the GARP Alpine Experiment (ALPEX). The MEDALPEX project took place between 1 September 1981 and 30 September 1982, with a special period of observation from 15 February 1982 to 30 April 1982. It was a multi-national project involving scientists from 7 countries.

The main purpose of MEDALPEX was to increase understanding of the effect of wind forcing on the dynamics of the western part of the Mediterranean Basin. Specific studies were undertaken, each having a particular scientific objective including:

1. The interrelationship between the general circulation and mesoscale eddies
2. Offshore dynamic response mechanisms under severe weather conditions
3. Storm surges and the piling up of water, especially in the Adriatic and Ligurian seas

The measurement of sea level was considered to be an important component of the observation program to support these studies. A wide range of other types of oceanographic data were also collected, including classical and synoptic meteorological measurements, data collected using remote sensing techniques and data from current meters, thermistor chains, waverider buoys, CTDs and XBTs.

The Permanent Service for Mean Sea Level (PSMSL) was requested by IOC to fulfil the role of the Responsible National Oceanographic Data Center for the MEDALPEX sea level data. The work was undertaken on behalf of PSMSL by the Marine Information and Advisory Service (MIAS) - U.K.'s National Oceanographic Data Center.

Sea level data were submitted to MIAS from 29 of the 40 MEDALPEX sites. An inventory of the data is given on the following page. Measurements from 28 of the sites were taken using conventional stilling wells and, with one exception, were supplied to MIAS as hourly values. Data from the remaining site, off the coast of Corsica, were collected by an Aanderaa water level recorder at half-hourly intervals.

INVENTORY OF DATA RECEIVED
BY MEDALPEX SEA LEVEL DATA CENTER

SITE	LATITUDE	LONGITUDE	START DATE	SERIES DURATION	CYCLE INTERVAL
	DDD MM.MH	DDD MM.MH	DD/MM/YY	WEEKS	SECS
CADIZ	36 32.0N	6 17.0W	01/09/81	56	3600
TARIFA	36 0.0N	5 36.0W	01/09/81	56	3600
GIBRALTAR	36 8.0N	5 21.0W	01/09/81	56	3600
CEUTA	35 54.0N	5 19.0W	01/09/81	56	3600
ALGECIRAS	36 7.0N	5 26.0W	01/09/81	56	3600
PUERTOS BANUS	36 37.0N	4 55.0W		NO DATA	
MALAGA	36 43.0N	4 25.0W	01/09/81	56	3600
ALMERIA	36 49.7N	2 29.2W	14/08/81	58	3600
CARTEGENA	37 36.0N	0 59.0W		NO DATA	
ALICANTE I	38 20.3N	0 30.4W	23/08/81	60	3600
ALICANTE III	38 20.3N	0 30.7W	28/08/81	60	3600
PALMA DE MALLORCA	39 33.0N	2 38.0E	01/09/81	56	3600
BLANES	41 41.0N	2 48.0E		NO TIDE GAUGE	
ROSAS	42 15.0N	3 11.0E		NO TIDE GAUGE	
PORT VENDRES	42 31.0N	3 6.0E	28/12/81	39	3600
SETE	43 25.0N	3 43.0E		NO DATA	
FOS	43 25.0N	4 46.0E		NO DATA	
TOULON	43 7.0N	5 55.0E	30/08/81	56	3600
NICE	43 42.0N	7 16.0E	03/07/81	68	3600
MONACO	43 44.0N	7 25.0E	29/06/81	69	3600
OFFSHORE	42 34.8N	8 44.0E	06/04/82	18	1800
NEAR CALVI	42 34.8N	8 44.0E	29/07/82	9	1800
AJACCIO	41 55.0N	8 43.0E	30/08/81	49	3600
CAGLIARI	39 13.0N	9 8.0E		NO DATA	
SAVONA	44 18.0N	8 28.0E		NO DATA	
GENOVA	44 24.0N	8 54.0E	31/08/81	58	3600
LA SPEZIA	44 7.0N	9 48.0E		NO DATA	
LIVORNO	43 33.2N	10 18.2E	31/08/81	49	3600
CIVITAVECCHIA	42 5.7N	11 47.4E	25/08/81	22	3600
NAPOLI	40 50.4N	14 16.2E	31/08/81	56	3600
PALERMO	38 8.0N	13 23.0E		NO DATA	
ANCONA	43 37.0N	13 31.0E	01/09/81	56	3600
PTO CORSINI	44 35.0N	12 20.0E		NO DATA	
VENEZIA	45 26.0N	12 20.0E	01/01/81	104	3600
KOPER	45 33.0N	13 44.0E	28/02/82	9	3600
ROVINJ	45 5.0N	13 38.0E	28/02/82	9	3600
BAKAR	45 18.0N	14 32.0E	28/02/82	9	3600
ZADAR	44 5.4N	15 16.3E	28/02/82	9	3600
NOVALJA	44 33.3N	14 13.2E	28/02/82	9	3600
SPLIT	43 30.0N	16 26.0E	28/02/82	9	3600
DUBROVNIK	42 40.0N	18 4.0E	28/02/82	9	3600
BAR	42 5.0N	19 5.0E	28/02/82	9	3600

In compiling the dataset, MIAS translated all incoming data into a common format with elevation values standardized to meters and times to GMT. The data for each site were plotted as a time series and checks were carried out for gaps or constant values, spikes, spurious data or punching errors. Further checks were carried out by tidally analyzing and low pass filtering the data. Non-tidal fluctuations were investigated using principal component analysis. Qualifying information applicable to the data from each site was checked for inconsistencies and completeness, and appropriate documentation was stored with the data in the form of plain language records. The complete quality controlled dataset, including documentation, is available as a single magnetic tape formatted in GF3, the IOC's standard format for the exchange of oceanographic data. A copy of the magnetic tape may be obtained at a cost not to exceed the cost of reproduction and postage from:

World Data Center A, Oceanography
National Oceanic & Atmospheric Administration
Washington, D.C. 20235
U.S.A.

or

RNODC/MEDALPEX Sea Level Data
MIAS
Bidston Observatory
Merseyside L43 7RA
U.K.

TROPICAL OCEAN and GLOBAL ATMOSPHERE PROGRAMME TROPICAL SUBSURFACE DATA SET

TOGA Tropical Subsurface Data Centre

The TOGA Tropical Subsurface Data Centre in Brest operates within the framework of both the IOC's International Oceanographic Data Exchange (IODE) system and the Joint IOC-WMO Integrated Global Ocean Services System (IGOSS). The Centre collects subsurface ocean observations for the tropical oceans (30°N-30°S) from the following sources:

1. tropical oceans observations from the IGOSS network;
2. additional vertical temperature profiles from XBT's and from drifting or moored buoys with thermistor chains, not sent over the GTS;
3. time series of temperature and conductivity (salinity) at fixed depth from moored thermistor chains;
4. surface temperature and conductivity (salinity) data and vertical profiles of temperature and conductivity as from CTD's, bottle casts, and WCTD's; and
5. other subsurface ocean temperature and conductivity (salinity) measurements from process-oriented intensive oceanographic observation projects in the tropical oceans.

Initially, data are collected from radio transmissions, with fully digitized and quality controlled observations added with time.

The subsurface thermal data described above are analyzed and the Centre produces quality-controlled Level II-B data sets for the tropical oceans for the ten-year period (1985-1994). The Centre is also responsible for provision of these data sets on magnetic tape in GF-3 format to other TOGA Data Centres and to the World Data Centers, Oceanography at appropriate intervals.



WDC-A, Oceanography Support to TOGA

WDC-A, Oceanography serves as an archival center for the TOGA Tropical Subsurface Data Sets. Its responsibilities are to provide TOGA data sets to requesters in the international scientific community, at a cost not to exceed that of data reproduction and postage, and to provide copies of all TOGA data sets received to World Data Center B, Oceanography in exchange.

WDC-A, Oceanography provides additional data management support to the TOGA program by its contributions to the enhancement of global tropical thermal data bases. WDC-A has utilized the IOC's lists of Declared National Programs (DNP's) to identify selected cruises for which data were observed in the tropical oceans and, subsequently, requested the data. Report of Observations/Samples Collected by Oceanographic Programs (ROSCOP) marine data inventory forms have been used in the same manner to identify available tropical oceans data. The compilation of the Time Series Data Inventories of the world's oceans by WDC-A, has also resulted in some cases in the identification of available tropical ocean observations. WDC-A expects to utilize these tools increasingly in the future to acquire selected data sets intended to further enhance the tropical oceans data bases.

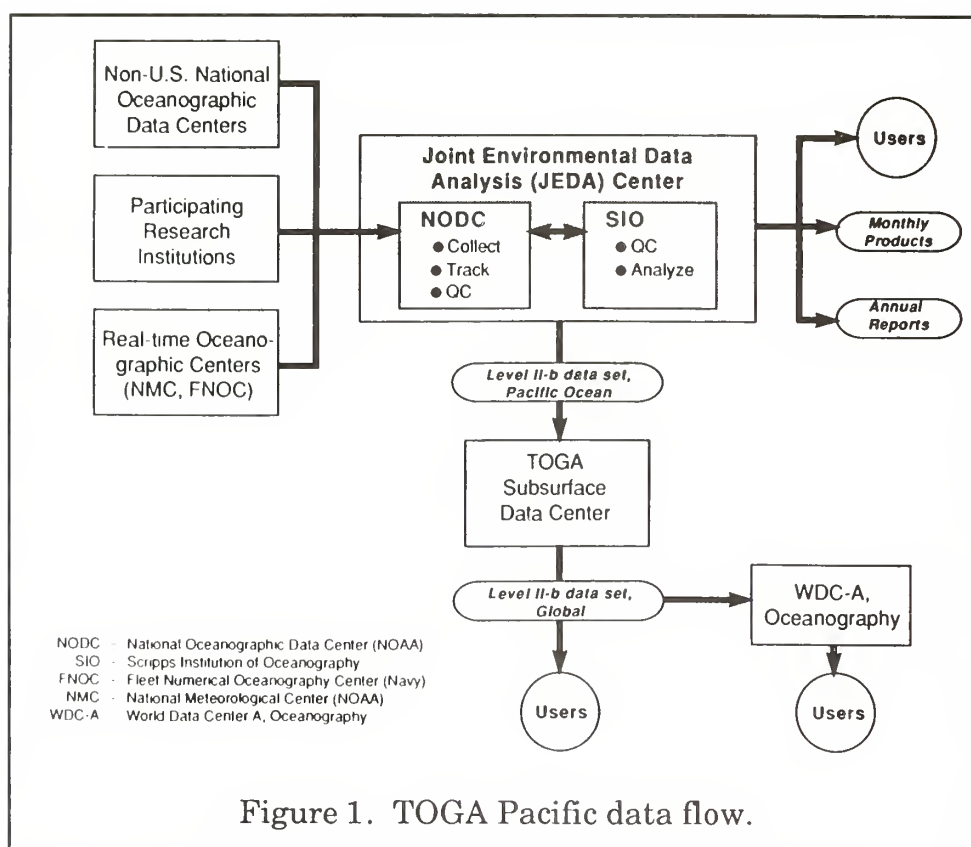
Climate researchers and modelling experts have identified the digitization of historical oceanographic observations as one of the key elements required in data management support for TOGA and other Global Change programs, such as GOFs and WOCE. Such data sets are frequently extremely useful in filling spatial or temporal gaps in existing digital data holdings. WDC-A, Oceanography's data archives contain data for a substantial number of observations in manuscript form that have never been processed. A significant portion of these could provide support to TOGA. For example, some Japan Fisheries Agency standard sections in the Western Pacific are in the TOGA area. Many of these manuscript data sets would be amenable to data entry by an optical scanning device. The possibility of support for procurement of such a device is being explored by WDC-A.

TOGA Tropical Subsurface Data Products

WDC-A receives Level II-B data sets from the Subsurface Data Centre in Brest for both Atlantic and Indian Oceans data, as previously described. Magnetic tape copies of the Level II-B data sets for the Atlantic and Indian Oceans are then provided to WDC-B, Oceanography in exchange. Magnetic tape copies of these data sets are available at the cost of tape reproduction from:

World Data Center A,
Oceanography
National Oceanic and
Atmospheric Administration
Washington, D.C. 20235 U.S.A.

TOGA Subsurface Data Centre
Centre IFREMER de Brest
BP 70
29263 Plouzane
France



WDC-A, by virtue of its collocation with the U.S. National Oceanographic Data Center (NODC), also has access to the Tropical Pacific Ocean data set prepared jointly by NODC and the Scripps Institution of Oceanography (SIO), serving as the Joint Environmental Data Analysis (JEDA) Center. JEDA tracks, acquires, quality controls, and merges all available subsurface thermal data for the Tropical Pacific. NODC assembles, reformats and initiates quality control of the data; SIO performs further quality control and analysis of the data. The TOGA Pacific data flow is depicted in Figure 1. Each yearly Level II-B Pacific Ocean data set undergoes the full spectrum of quality control and analysis by the JEDA Center. It is then converted to the GF-3 format and provided to WDC-A, which in turn provides a tape copy to WDC-B in exchange. The TOGA Pacific Data Sets are available on magnetic tape at the cost of tape reproduction from:

World Data Center-A, Oceanography
 NOAA
 Washington, D.C. 20235 U.S.A.

JEDA Center
 National Oceanographic Data
 Center
 NOAA
 Washington, D.C. 20235 U.S.A

JEDA Center
 Scripps Institution of
 Oceanography
 University of California
 La Jolla, CA 92093 U.S.A.

RNODC SOC

SOUTHERN OCEANS DATA SET

The RNODC/Southern Oceans (RNODC/SOC) was created in order to provide a regional data management and data information service for Southern Oceans physical and chemical oceanographic data. The RNODC was created under guidelines set forth in Recommendation XII.1 by the IOC's Technical Committee on International Oceanographic Data Exchange (IODE XII, Moscow 10-17 December 1986).

The Terms of Reference of the RNODC/SOC include the following responsibilities:

- Acquire, quality control, and store in standard format the physical and chemical data obtained by the international community from the cruises and research programmes carried out in the Southern Oceans;
- Co-operate closely with the World Data Centers, Oceanography by sending regular shipments (at least once a year), free of charge, of complete sets of physical and chemical data stored on magnetic tapes in GF3, and inventories, data summaries, and other data products related to the physical and chemical data from the Southern Oceans;
- Assist the World Data Centers by sending copies to them of any ROSCOP forms submitted to the RNODC-SOC;
- Co-operate with the BIOMASS Data Center, regarding exchange of data and inventories, as well as other data products.

The RNODC-SOC is located in and operated by the Argentine Oceanographic Data Center (CEADO).



RNODC/SOC Oceanographic Data Set

The RNODC/SOC data set contains data for all available oceanographic stations for the Southern Oceans between 50° and the Antarctic Continent. Data for a total of 10,202 oceanographic stations taken during 272 Southern Oceans cruises are included in the data set. Seasonally, the data totals are 1,898 observations taken during the Austral Winter (April-September) and 8,304 observations taken during the Austral Summer (October-March). Southern Oceans observational data taken by 14 countries have been received by the RNODC.

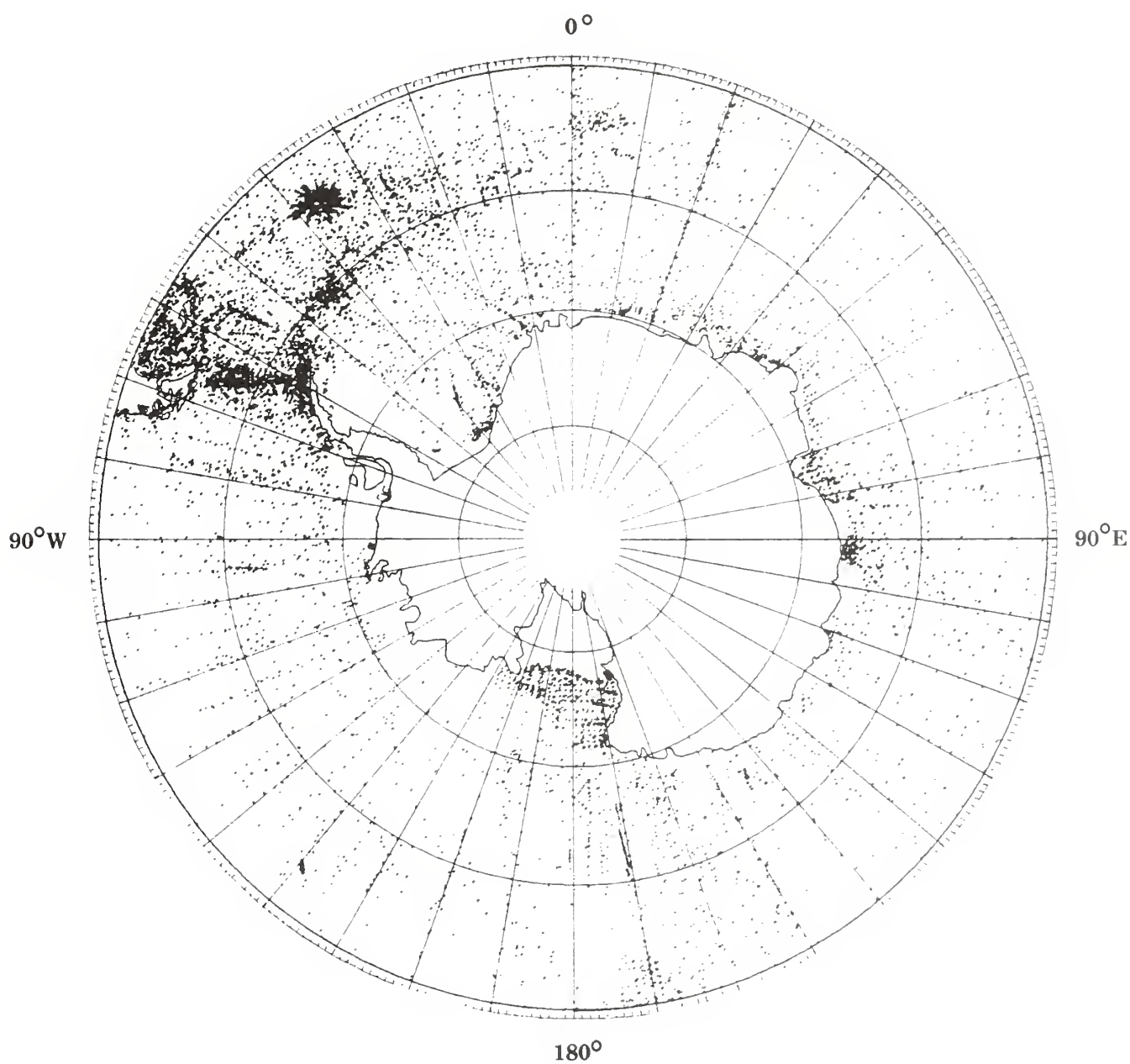
The RNODC/SOC data set is available from:

RNODC/SOC
Servicio de Hidrografia Naval (A.R.A.)
Centro Argentino de Datos Oceanograficos
Avda. Montes de Oca 2124
(1271) Buenos Aires
Republica Argentina

or

World Data Center A, Oceanography
National Oceanic & Atmospheric Administration
Washington, D.C. 20235 U.S.A.

SOUTHERN OCEANS OCEANOGRAPHIC STATION PLOT



This plot shows the locations of 10,202 oceanographic data observations made in the Southern Oceans and registered in the RNODC/SOC master data file.

RNODC IGOSS

INTEGRATED GLOBAL OCEAN SERVICES SYSTEM DATA SET

IGOSS Background

The Integrated Global Ocean Services System (IGOSS) is a worldwide system for the rapid collection, exchange, and analysis of oceanographic data and the timely preparation and dissemination of ocean products and services. IGOSS was established to support oceanographic and meteorological research efforts by providing: (1) a global distribution of oceanographic observations, (2) a mechanism for the timely and effective exchange of data, and (3) the preparation of oceanographic analysis products capable of supporting global change and climate research studies. IGOSS products and services can be useful for input to large scale circulation models, for research survey planning, and for direct application in commercial fisheries, recreation, commercial shipping, and search and rescue efforts. Real-time ocean products currently available include sea surface and subsurface temperature analyses, as well as graphical depictions of mixed layer depths and ocean frontal positions. Additional analyses and data summaries available as delayed-mode products include: (1) ocean currents, (2) salinity, (3) distribution of pollutants, and (4) weekly and monthly temperature means. The IGOSS data are BATHY (profiles of temperature with depth) and TESAC (temperature/salinity/current profiles with depth).

The major operational elements of the IGOSS program are: (1) observing system, (2) data processing and services system, (3) telecommunication arrangements, (4) marine pollution monitoring, and (5) data archival and exchange. The organizational structure of the IGOSS data processing and services system consists of World Oceanographic Centers in Moscow and Washington and National and Specialized Oceanographic Centers in participating nations. Data from all cooperating nations are combined in standard formats at the World Oceanographic Centers, and then used as input to global and hemispheric analyses for improved weather forecasting, global climate studies, and a variety of products for oceanographic research uses. National Oceanographic Centers provide quality control for data from their country entering the international exchange system via a high speed global telecommunications link called the Global Telecommunication System (GTS) of the World Weather Watch.



IGOSS



Long-range data exchange and service arrangements and long-term archival functions for IGOSS data are performed by National Oceanographic Data Centers in Japan, the U.S.S.R., and the United States. These NODC's, serving as Responsible National Oceanographic Data Centers (RNODC's) for IGOSS, compile archives of IGOSS data and products, assume responsibilities for specified regions of the world oceans, and deal with problems of quality control. They maintain geographically sorted, updated magnetic tape files of observations received via the GTS.

RNODC's/IGOSS Terms of Reference

The terms of reference for RNODC's/IGOSS are as follows:

1. Acquire BATHY and TESAC datasets and sub-surface temperature data from drifting and moored buoys from IGOSS Specialized Oceanographic Centres (SOC) for area of responsibility; apply supplementary quality control to acquired data and provide services to users after 30 days from receipt of that data;
2. Acquire non-operational BATHY, TESAC, and sub-surface temperature data from drifting and moored buoys and/or datasets for area of responsibility; apply quality control to non-operational data, prepare integrated datasets, and provide services to users;
3. Maintain a data base and inventories for areas of responsibility;
4. Prepare products based on operational and non-operational IGOSS data, as appropriate; also, archive and make available to users, selected data products provided by SOCs and analysis centres;
5. Provide for exchange of IGOSS data in GF-3 format with other RNODC's or to users as requested;
6. Transmit datasets in GF-3 format, inventories of archived data, and selected data products to the WDC's annually;
7. Provide for exchange of documentation and software regarding quality control and processing procedures with other RNODC's, as possible;
8. Participate in efforts to monitor data flow, and participate, as feasible, in IOC training programmes;
9. Prepare inventories of available data sets for the RNODC's area of interest and transmit them to the IOC Secretariat semiannually.

RNODC/IGOSS-Japan

The RNODC/IGOSS-Japan is operated by the Japan Oceanographic Data Center (JODC), with support from the Japan Meteorological Agency (JMA), which serves as a Specialized Oceanographic Center (SOC) for IGOSS. At the SOC, systematic quality control of the collected BATHY/TESAC reports is made. The SOC compiles the IGOSS monthly summaries including maps showing the geographical distribution of BATHY/TESAC messages and numbers of messages of individual ships and sends them to the Secretariat of the IOC.

IGOSS data submitted by the SOC are stored in three formats at the RNODC/IGOSS. The first includes the original data file compiled on a semiannual basis. This file contains the collected and processed data from the GTS and other operational sources within the area of responsibility. The second contains the data and data inventory files recorded in a form of the SYNDARC Format, and is available to users as computer-generated data summaries, statistical presentations, and graphical plots, or in a medium which allows the user to further process the data using a personal computer. During the conversion process, minimum quality control procedures are applied to the original data based on IOC Manuals and Guides No. 3. The third is the JODC-formatted version of the data inventory file. From this file, data products such as data summaries and location plots of observations are provided to users, as well as to the IOC and WMO.

RNODC/IGOSS-U.S.S.R.

The RNODC/IGOSS-U.S.S.R. and SOC for IGOSS data was established in 1984 under the auspices of the All-Union Scientific Research Center for Hydrometeorological Information and Hydrometeorological Scientific Research Center of the USSR (Hydrometcentre USSR). The responsibilities of the RNODC/IGOSS include the collection of BATHY/TESAC messages and logs, quality control of the data, preparation of data sets on magnetic tape, and the development of products concerning availability and time-space data distribution. The RNODC/IGOSS also provides national and international users with copies of data, results of analyses, and with other products for its area of responsibility.

The responsibilities of the SOC include preparation, publication, and distribution of different types of operational oceanographic products on a regular basis including those distributed via FAX machines that are readily available to different groups of users.

These activities are carried out in accordance with the procedures spelled out in the IOC's Guide to Operational Procedures for the Collection and Exchange of Oceanographic Data (BATHY and TESAC), 1985 and the Guide to the IGOSS Data Processing and Services System, 1983.

RNODC/IGOSS-U.S.

The RNODC/IGOSS-U.S., located at the National Oceanographic Data Center (NODC), receives near real-time data weekly from the Ocean Products Center at Suitland, Maryland and the Ocean Applications Group in Monterey, California. These data are extracted from the Global Telecommunications System (GTS) on a daily basis for screening and editing. At the RNODC, the magnetic tapes containing the near real-time data sent by the two organizations are run through a series of computer programs to convert the data into NODC's Universal Bathythermograph (UBT) format. This data set is next sorted by date, time, position, and an indicator of the source of the data. The sorted file is then compared with existing observations and duplicates are eliminated.

The records retained are then sorted by reference number, date, and time to produce a cruise-ordered data set. From this final data set, inventory records are created and applied to NODC's Data Inventory Data Base (DINDB). These data are then merged into the RNODC/IGOSS Archive. The Archive is updated on a monthly basis in geographical sequence.

Data in the U.S. RNODC/IGOSS Archive are then available for international exchange and can be provided to users in a variety of forms ranging from magnetic tape copies to computer-generated data summaries, statistical analyses, and graphic plots.

Availability of IGOSS Data and Products through WDC A, Oceanography

Various RNODC/IGOSS data, analyses, and products are available through WDC-A, Oceanography. Upon request, WDC-A will provide magnetic tape copies of pertinent data products, or, alternatively, refer the requester to the appropriate IGOSS data source.

RNODC DRIBU

RNODC FOR DRIFTING BUOYS

Background

The Marine Environmental Data Service (MEDS) began operation of the RNODC/Drifting Buoy Data in January 1986. The RNODC acquires Drifting Buoy Data from worldwide sources, makes the data available to international scientific programs, and prepares geographical plots of Drifting Buoy locations and tracks for the world oceans on a monthly basis. The RNODC also provides monthly statistics of operational buoys and the number of messages received from them.

Acquisition of Drifting Buoy Data

There are three procedures by which Drifting Buoy Data are received by the RNODC. The first and more traditional is for the principal investigator to submit his data directly to the RNODC, or to his National Oceanographic Data Centre which in turn submits the data to the RNODC. For historical data sets, this is the only option available. Data received in this way are usually of the highest quality, since they have undergone the most discriminating calibration and quality control procedures under the direction of the principal investigator; however, data entering the system in this manner are not sufficiently timely to meet the operational requirements of the major global science programs.

The second path for data flow to the RNODC is via the GTS. An advantage of this procedure is that the data are available in time scales suitable for the operational requirements of researchers in programs such as TOGA and WOCE, as well as for other operational users such as meteorological forecasters. Data received in this way may be less accurate, because they have not been fully reviewed and assessed by the principal investigator. For drifting buoy data, there is also a problem in that using the DRIBU format on the GTS for some buoys may limit the data that can be transmitted, because of a requirement to restrict the information to 256 bits.

A third procedure involves retrieving the DRIBU data as they pass through Services ARGOS. Although these data still have not been reviewed and assessed by the principal investigator, they are an improvement over the GTS data in that both time of data and time of position are available to improve velocity calculations. Data received by Service ARGOS are stored on magnetic tape for a period of 90 days. After this time, the tapes are reused and the data then reside solely in the hands of the principal investigators. Canada and the United States have agreed to share the cost of buying copies of these tapes for the RNODC. Data from a buoy can only be provided to the RNODC if the principal investigator has given consent in writing.

RNODC/Drifting Buoy Data Base

MEDS utilizes a hierarchical database, called System 2000, to store the drifting buoy data; because of the volume of data, each year of data is stored in its own data base. In order to provide services to users at all time scales and to have available at each time scale the best data available, the RNODC has decided to accept all data using the following hierarchical guidelines:

1. Where possible, Principal Investigators are requested to make their data available to other operational users and to the RNODC by having the data transmitted on the GTS. The RNODC will copy all available data from the GTS, quality control it, and update it into the data base on a weekly basis.
2. Principal Investigators are also requested to agree to have Service ARGOS provide a copy of their data to MEDS via tape each month whether or not those data have already been on the GTS. The data circulated on the GTS have only the one time included which poses a difficulty in calculating velocities. Thus, the tape data with the two times is an improvement to the database and will be used to replace the GTS data in the database. In addition, data will be picked up which could not be circulated on the GTS because of the format of the transmission from the buoy.

If Service Argos has not already been supplied with the calibration constants, channel allocations, and algorithms, or has not been requested to make the conversions to physical units, there will be a requirement for the RNODC to obtain this information from the principal investigators. Principal investigators are reminded that if the sensor data cannot be made available, the position data itself is of value for the database.

3. Principal Investigators are requested to provide a copy of their Drifting Buoy Data either directly to the RNODC when the fully processed, quality controlled version is available, or to provide the data to their National Oceanographic Data Centre, where the RNODC will be requesting such data on a regular basis. Data received by this path will replace GTS or Service ARGOS versions of the data in the database.

By receiving data in the configuration set forth above, and replacing earlier, lower quality data as higher quality versions of the data arrive, the RNODC can offer users a choice between timeliness and quality, as dictated by their particular requirements.

The RNODC recognizes that in some cases there exists a need to restrict distribution of data to protect a scientist's right to benefit first from collection activities carried out at a considerable effort and cost. It is noted that the large international experiments generally have data exchange agreements that state when the data are available to other participants and to those outside the program. The RNODC will honor such data exchange agreements and will, at a scientist's request, restrict further distribution of the data according to the terms of the pertinent agreement. In regard to data from individual scientists, bilateral agreements on further distribution of data for a period of up to two years can also be made, if necessary.

RNODC Services

As mentioned earlier, the RNODC maintains its drifting buoy in a data base structure. This provides maximum flexibility when meeting a request. While a number of different qualifiers may be used to retrieve data, the most common are area and time. Requesters may also specify all data or only those which have passed the quality control procedures. On output, the data can be written to magnetic tape in a standard subset of the GF3 formatting system or in some other agreed ad hoc character format if appropriate. In choosing the data format users should be aware that the GF3 Formatting System is supported by a powerful and growing software system which is available for many of the more widely used host computers.

Each month, the RNODC publishes a summary of the data it has received in real time; also produced are global maps of drifting buoy tracks for the previous month. These maps are issued regularly on a monthly basis. Anyone wishing to receive this summary, should contact the RNODC. There is no charge to receive this product.

To obtain the RNODC Drifting Buoy Data Set, requesters should contact one of the following:

RNODC for Drifting Buoy Data
Marine Environmental Data Service
Department of Fisheries and Oceans
200 Kent Street
Ottawa K1A 0E6 Canada

World Data Center A,
Oceanography
NOAA
Washington, D.C. 20235 U.S.A.

Telephone: 613-990-0268
Telex: 053-4428
Telemail: RNODC.DRIBU (Omnet)

Telephone: 202-606-4571
FTS-266-4571
Telemail: NODC.WDCA (Omnet)

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